

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 the municipal roads which connect to the private roads. There are also PRAs that are responsible for ferry services, for example in the Stockholm archipelago.

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. The result can be, as in the United States, substantial waste in the provision of local roads, as shown by John Semmens in Chapter 2 (“Using Privatization to Improve Highway Financial Performance”) of this volume. This waste is partly due to “pork barrel” legislation—when taxes are raised nationally but spent locally, there is incentive at the local level to spend well in excess of benefits since local constituents face only a small proportion of the costs. Alternatively, when roads are locally used but provided by higher level government, local roads are undersupplied and under-financed. This is often the case in developing countries, particularly in rural areas.

Another challenge in the construction and maintenance of low volume roads comes when locals are not the predominant users of the roads. One alternative (adopted in 18th century United Kingdom and often tried and subsequently abandoned by rural communities to date in developing countries) is toll collection. It has obvious problems: when traffic is low, cost of collection may render tolling unprofitable. In addition, it is 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 not use tolls but instead 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:

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, the World Bank. Review and advice were provided by Ian Heggie (University of Birmingham), Daniel Klein, Gabriel Roth, and Alexander Tabarrok, and Stephen Brushett and Antti Talvitie of the World Bank.

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. The evaluation concluded that the private-public partnership for low volume roads is economically desirable and recommended continued public funding to PRAs.³

The Swedish model for managing low volume road is simple and efficient and can easily be adapted to a variety of circumstances in both rich and poor countries. It provides legal and financial incentives for local property owners to associate and assume responsibility for their roads. It is remarkable that only few countries have adopted similar institutional arrangements for the very lowest but most extensive part of the road network. Could it be because they do not have a tradition of community involvement in roads? Or is it lacking political will? Another possibility is that the Swedish experience based on a well-tested partnership between the private and public sector simply is not internationally known? The challenge involved in managing and financing low volume roads is examined below, primarily in the Swedish context but also by drawing on experience from elsewhere.

Sweden’s roads

The Swedish road network measures 419,000 kilometers (see 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 purposes⁴, about one third of the private roads carry more than 100 vehicles per day, including some up to a 1,000 vehicles per day throughout the year. This paper focuses principally on the 50 percent of the private road network which is owned and managed by communities, half of which receive state subsidies.

² The evaluation estimated the 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.

³ The evaluation also recommended an assessment of the rules for changing the ownership of roads from public to private and vice versa. Some public officials in Sweden would like to further increase the proportion of the network managed by PRAs due to the associations’ ability to operate and maintain roads at relatively low cost, and, at the same time, reduce the level of subsidies. There are, however, risks involved in increasing this network—as the roads get larger and the through-traffic increases, the close connection between the use of the road and the property/road owners declines. In addition, if the subsidies fall below a certain level, PRAs may opt to close their roads to the public. In other words, it is critical to ensure there is a balance between the public subsidies and the demands placed on the PRAs.

⁴ Forest roads are classified as private roads because there are legally only three classes of roads in Sweden—state, municipal and private. They are generally referred to separately from the community management roads as “roads in the forest.”

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 |

A legal tradition of community road management

The Swedish road legislation is based on a concept of justice with roots in the Iron Ages—perhaps as early as the fifth century. During the introduction of Christianity in Sweden in the eleventh century, the laws governing the various provinces started to converge, and as the church became more powerful, it demanded roads to the places where the tithe should be paid. All farmers had to pay a tenth of their harvest (“income”) in kind. Roads and transport to the collection points were essential to deliver this payment.⁵

King Magnus Eriksson’s Law from the middle of the fourteenth century was the first road act governing all roads in Sweden. It states in its first chapter that “There shall be one public road to each village and another one from the village.” In the second chapter it reads: “Everybody shall be responsible for roads and bridges as far as his property ranges.”

Already here we find that the responsibility for the roads rests with those living along the network. This concept has carried through into modern time, and it was not until 1944 when traffic development and transport needs prompted state management of the first national road network.⁶ At that time, the City Councils had been responsible for their streets for more than a hundred years. But city roads were only a very small part of the network as Sweden up until this time was primarily a rural society.

After World War Two, with the increased use of heavy vehicles and cars, the owners of the private road network started to complain about the increased road damage caused by the growing traffic from the mechanization of farming and forestry, and from small and medium industries. Around the same time, demand increased for the construction of more and better roads in previously undeveloped areas. (The steady improvements in living standards enabled more households to purchase summer and weekend homes and cars.) Many of these areas were of interest also to people who did not own properties there.⁷ As a result, private road owners increasingly demanded compensation from

⁵ The church has played a major role in road provision in many countries throughout history, for example the English monasteries, the Archbishop of the Democratic Republic of Congo (then Zaire), and many faith-based non-governmental organizations in developing countries.

⁶ Before 1944, a regional engineer was charged with the responsibility of checking on the road condition of PRA roads (and reporting to the King), however, there was no state road agency.

⁷ In Sweden there is a customary right of public access (so called ‘everyman’s right’) for berry-picking, swimming, and camping for a night or two as long as there is no interference with the property owners.

government for the additional maintenance burden. A road network administration became necessary and in the beginning of the 1950s, parliament instructed SNRA to design a system whereby the state would compensate private road owners for the public use of private roads.

Private Road Associations

Today, approximately sixty thousand PRAs own about 140,000 kilometers road in Sweden.⁸ They are responsible for the operation and maintenance of the roads. The associations and their members may choose to carry out the road works by themselves or employ a contractor.

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.

SNRA determines whether a road should be government owned or private. The private roads have a well-articulated legal framework, described in the next section, but what constitutes a private road is not defined precisely in law but according to regulations, which change from time to time. There are thus some grey areas with regard to road designation which are subject to interpretation. If the owners of a private road disagree with SNRA's decision on the status of a road, 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 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.

⁸ The remainder of the private road network are "roads in the forest" that are cleared periodically principally for logging purposes.

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. A very important actor in representing the interest of PRAs at the national level and in political discussion is the National Federation of PRAs (NFPPRA). Each framework component and the NFPPRA are described below.

Legal ownership and survey

In Sweden, the legal framework, the Private Roads Act, is the most important part of the institutional framework for private roads. Strictly speaking, no one can be held legally responsible for a specific road unless that person or entity has been granted or has established legal ownership. When a road is designated, this act is usually published as a notice in the government gazette (or other official publication) used to record official acts of the government (Malmberg Calvo 1998).

In Sweden, most private roads are cited under the Private Roads Act. The first modern private roads act dates from 1939. Since then it has been revised on numerous occasions, most recently in 1998. In 1998 the acts governing private roads in both urban and rural areas were joined together in a common framework.⁹ The Private Roads Act outlines how property owners can form themselves into PRAs and how these organizations should be organized and run.¹⁰ It sets out how the PRA should be proclaimed and how the costs of the road should be assigned among the different property owners, principally according to road use and benefit. It also specifies how a property owner can challenge her/his allocation. A government officer who carries out a survey of the road's usage determines the allocation.

A PRA is usually established by means of a legal survey.¹¹ 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. Certain authorities, such as SNRA, can also take the initiative for the survey. The Cadastral or Land Survey Office appoints an impartial government or municipal officer to carry out the survey.

⁹ The 1939 Private Roads Act stipulated that rural PRAs divide road costs among the property owners according to road usage/benefit, and urban PRAs allot costs according to the property taxation value. In 1973, the act governing rural PRAs was replaced by an act that governs a variety of common properties such as recreation areas and playgrounds. In 1998, the 1939 act governing urban PRAs was incorporated in a revised version of the 1973 act, i.e., the rules governing both the rural and urban PRAs are now joined and costs are shared among the members according to road usage/benefit.

¹⁰ The PRAs are also recognized under the "Land Code" of 1970, the "Real Property Formation Act" of 1970, the "Joint Facilities Act" of 1973, and the "Joint Property Units (Management) Act" of 1973.

¹¹ A couple of thousand PRAs are not legally constituted. Nonetheless, some of these PRAs receive state grants provided their roads qualify and they have a Board, an annual meeting, a budget, and carry out independent audits. These PRAs depend on 100 percent unanimity in all decisions. In cases where there is disagreement, they will have to proceed to carry out a legal survey. This was the case in 2002 in one PRA in Roslagen, just north of Stockholm. This PRA had operated with 35 members for more than 30 years without being legally constituted. As a new property owner moved into the community, there was disagreement, and the PRA proceeded by requesting assistance from the NFPPRA and a legal survey.

The objective of the survey is to establish the members of the association (property owners along the road), and their individual “shares” in the road. 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. A fee will be imposed according to the shares decided upon in the survey.

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 ask the local tax authority to collect the payment. Swedish Law gives priority to the collection of the unpaid fee of a PRA member before the collection of other types of debt, and in case payment is not forthcoming, the tax authorities can impose sale of the property.

The PRA Board and by-laws

Most private roads are administered by PRAs. An elected Board administers all PRAs 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 legal surveyor will help to set up the PRA, including the registration and election of the Board officers. The size of the association will vary depending on the number of member property owners. Some associations pay the Board members; others do not.

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 anticipated expenditures. A Board member may be in charge of the day-to-day operations of the association or the association may hire someone to manage the account and other issues on its behalf.

The Board has to call all PRA members to a general meeting at least once a year. This meeting tables four main items: i) the Board’s administration for the year is scrutinized (audit of the accounts and the “management letter”), ii) election of officers takes place, iii) it is decided which investment and improvements are to be undertaken for the coming year, and iv) the Board has to respond to the sometimes critical 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.¹² In the case of construction of large bridges, SNRA provides technical assistance to the PRAs in the preparation of tender documents, bid evaluation, and works supervision. SNRA recognizes that it is not reasonable that a handful or two of property owners would assume responsibility for the construction of bridges worth more than half a million dollars.

All costs are shared among the members according to road use and benefit. 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 (there is no tolling of roads in Sweden¹³). The latter two are in most cases insignificant. Many municipalities opt not to issue grants to PRAs because these grants would have to be financed by the taxes collected from the same local inhabitants.

The Swedish central government subsidizes private roads because it recognizes that significant use of these roads by outsiders can substantially increase the costs of road operation. Private roads frequently supplement the government owned roads by serving as connectors or short cuts for people who are not members of the specific PRA. In fact, in Sweden every fourth trip starts or ends on a private road. Against this background, 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, and
- are open for public use.

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 (for example, a road that connects two higher level roads usually receives the highest subsidy¹⁴), and the availability of public services. The application of these criteria can be gleaned from Table 2 which gives a breakdown of the type of roads which

¹² The National Federation of PRAs, however, would like SNRA to take over the responsibility for the upkeep of the bridges on those roads which receive public grants. It estimates that there is maintenance backlog of about US\$ 37 million on the bridges and actively lobbies the SNRA and government decision-making bodies on this issue. But the SNRA is reluctant to accept any additional responsibility being hard stretched to meet its existing commitments. This is a key argument of the Federation in its pressure to avoid cuts in funding levels.

¹³ The recently (July 2000) constructed bridge between Malmo and Copenhagen is an exception to this rule—all traffic pays toll on the bridge.

¹⁴ In 2001, however, only ferries received the maximum grant of 80 percent.

receive grants. In 1999 the maximum grant of 80 percent was allocated to through roads; 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.¹⁵

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.¹⁶

Most private roads are narrow—about 3 to 4 meters wide and of simple construction. Winter management features strongly in most PRA budgets because of frequent snow plowing and spring repairs of ground frost related surface damage—often 25 percent of the budget. All road marking, signs and standards for visibility have to conform to those of government owned roads. Design plans for new construction or large rehabilitation works are reviewed by SNRA.

The amount central government expends on grants is large and has been constantly growing—about US\$70 million per annum in 1999. 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 very low cost. Many association members are also willing to clean verges and culverts, and clear brushwood to keep down membership fees.

About 25 percent of all private roads receive grants (about 74,000 kilometers, see Table 2 for the characteristics of these roads). 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. The financial support to the PRAs is seen as critical to government policy to assure and reduce the cost of access in remote areas, and preserve existing road assets.

¹⁵ Funding levels fell even further in 2002 which meant that roads that had received 70 percent grant support in 2001, only received 60 percent, and so forth.

¹⁶ The estimates of the required grants in each local office of the SNRA are then aggregated nationwide to arrive at the requested budget support from central government.

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) |
|--|--------------------------------------|---|--------------------------------------|
| Roads giving access to permanent residences in rural areas | 53 000 | 70 | 375 |
| Roads giving access to permanent residences in urban areas | 2 000 | 40 | 7 |
| Through roads | 7 000 | 80 | 55 |
| Recreational roads | 3 000 | 50 | 11 |
| Roads giving access to recreational properties | 3 000 | 40 | 15 |
| Roads giving access for commercial activities | 5 000 | 70 | 37 |

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. Most PRAs are rather small and would on their own not be able to effectively represent or defend their interests at the national level. 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. Their management and technical skills, however, were often limited, and they lacked legal competence. 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).

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.

An important task for the NFPRA is to meet regularly with national politicians, and members of Parliament and the Cabinet, and also to frequently brief the Ministry of Transport and Communications of the views and concerns of its members. The NFPRA Board has four officials: a politician who serves as chairman, a solicitor, a road engineer, and a cadastral surveyor. The affiliation of the politician does not matter—only the keen interest in private roads is considered. The appointment to the NFPRA Board is considered an honor and is unpaid. Up to 2001, the NFPRA employed only one part-time clerk responsible for the registers and day-to-day correspondence. Given the increased importance of ensuring continued political support at the highest levels, the NFPRA, since 2002, is engaging the services of its vice chairman, a retired official of the SNRA, on a part-time basis.

The NFPRA annual membership fee per PRA is US\$50 plus US\$5 per kilometer. The fee includes a comprehensive package of insurance covering liability, fidelity, property damage, bodily injury, and legal expenses. NFPRA purchases the insurance since more than 30 years from one of the largest Swedish insurance companies. The coverage has broadened over the years. The annual premium for about 6,400 associations is about SEK 1 million (US\$110,000). During the 1990s when NFPRA grew rapidly, claims increased proportionately as well. The insurance company found that it breaks even at about 4,500 PRAs and claims have amounted to about 80 percent of premiums over the last few years.

Most claims stem from liability and legal expenses. For example, provided it can be proven that the PRA was aware of an existing pothole but did not take appropriate action, a bicyclist who is injured when s/he falls off the bike due to a pothole in the road can sue for reimbursement of expenses not covered by her/his own accident insurance and loss of income. The insurance will cover the award the court assigns to the claimant. Another example includes damage to the road by a contractor working on one of the properties. If the contractor refuses to pay, the PRA can sue and the insurance will cover the legal expenses. In the opinion of the NFPRA, it is unlikely that PRAs would have sued had they not had insurance.¹⁷

NFPRA, together with SNRA and the Country Cadastral Survey Offices, also organizes a wide range of training courses for PRAs Boards and interested members such as traffic safety, environmental issues, surface options, winter maintenance, and so on.

Three Different Private Road Associations

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 three PRAs of Broby, Saltaro, and Akersberga, all within the greater Stockholm area, illustrate the range of PRAs—from the small to the large (see boxes 1, 2 and 3).

¹⁷ The SNRA can also be sued if it has not kept “public roads in a for the users satisfactory condition.” While this is so far a rare occurrence, it may become more frequent. One recent case that went to the supreme court awarded the plaintiff compensation for a traffic accident on an icy road even though there had not been much time for the SNRA to remove the ice.

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Box 1. Broby PRA—small, beautiful, and cost-efficient

Broby PRA is a very small association. It has 1.2 kilometers of road and consists of the seven properties of Broby village, situated in Vallentuna municipality (about 40 km from Stockholm center). The village has two farms and five other homes whose owners commute to work.

The most interesting aspect of Broby PRA is that its members do a lot of labor-based activities on their road. In this way, they minimize the need for cash fees. The members gather on a Saturday in September to carry out routine maintenance works including regravelling of the carriageway, clearing of drainage ditches, vegetation control, and other activities they can perform by hand.

SNRA estimates the reasonable local cost of road operation and maintenance to Broby PRA to be US\$ 1,700. The government grant to Broby PRA is US\$ 1,000, i.e., 60 percent of the estimated cost. The labor cost is included as a costed item in the association's annual budget and therefore forms part of the basis for obtaining government support through subsidies. The annual state subsidy and savings arising from the use of their own labor are used to purchase materials and for paying contractors for the work the members can not perform themselves, such as snow plowing. In fact, given the significant labor contribution of the property owners and their constant vigil, Broby PRA has not had to charge members any cash fees for several years.

Broby PRA has divided the road into seven sections to conform to the number of properties. During winter, each property is responsible for the basic maintenance of their respective section. To facilitate snow plowing, even in a snowstorm with limited visibility, poles painted orange (the stems of 6-8 year old trees which have been stripped of branches except on top) are used to guide the snowplow. Each PRA provides its own poles and most are replaced every year because they are virtually at zero cost as the property owners get them from their own forests—all PRAs work hard at keeping down costs thus membership fees. The poles are placed about 50 meters apart and checked every time a household member travels on the road—the wife, husband, and even the children on their way home from school. All household members are well aware that the road is a their mutual responsibility and that they have to ensure it is operational, safe, and maintained.

Box 2. Saltaro PRA—growing and needing investment

Up until the 1960s, Saltaro was one single farm on an island in the Stockholm archipelago. In the 1970s, the owner cut up a few plots and sold them for summer homes. Shortly afterwards, the original owner found he had no less than 400 neighbors, with a peak during the month of July. Over the years, the new homeowners began to spend more and more time on the island and the original summer homes became all year round leisure homes. Eventually some property owners relocated permanently to the island, and a public bus line was established between Stockholm and Saltaro, facilitating a daily commute.

The road quickly became a common concern among the property owners. In the 1970s as the first summer home owners came to the island, there was only one single-lane road—between the farmer’s barn and home—used by the tractor and the cows. As the resident population on the island grew to about 400 properties, something had to be done. SNRA was consulted and it was recommended to build a new road justified on the basis of accessibility, road safety, and environmental concerns. The new road was 4 kilometers and cost more than SEK half a million (US\$ 60,000). A government grant covered 70 percent of the costs. An additional 10 percent was received from the local bus company because the new road made it possible to operate standard buses. The remainder was shared between the property owners (about US\$250 each). With the assistance of SNRA, designs were drawn up and approved, a bank loan was granted (with the 400 properties as security), and a contractor was engaged to carry out the construction. The new road is six meters wide and meets the environmental requirements.

Today, Saltaro PRA, is responsible for a total of 30 kilometers of road of which 14 kilometers qualify for government grant support (10 kilometers are gravel and 4 kilometers are paved). It receives a grant that covers 40 percent (about US\$ 7,200) of the required annual expenditures. The PRA was instrumental in bringing the property owners together and in harnessing the required capacity for collective action.

Box 3. Akersberga PRAs manage the council's roads

Akersberga has grown from a village of 150 people in 1950 to a community with 6,000 inhabitants in 2001. During the 1960s people working in Stockholm began to settle in Akersberga which is only a half-hour travel from the city. As a result, demands for a modern road network increased. A PRA has always managed the community's roads, as was the norm in Swedish villages in the 1950s. As Akersberga grew, a number of PRAs were established to manage the roads. The total road network is 69 kilometers, most of it is paved, serving 3,200 properties.

Road needs in Akersberga were large and funds were scarce. The roads required paving, sidewalks, upgrading, and street crossings. At one point it was proposed the municipality take over the responsibility for the roads in the community as was common in other Swedish cities. The options were to either have the City council run the roads, and finance expenses out of the tax base, or to let the PRAs continue to own and manage the roads. A large majority of the Akersberga residents opted to keep the PRAs and let them manage the road network.

The typical PRA board in Akersberga has seven members and employs a retired person by the hour to take care of the day-to-day administration. The annual cost of the roads is around US\$130 per property owner. Akersberga PRAs receive no government grant because central government considers the roads the responsibility of the urban municipality. Akersberga is an example of where the PRA model has been applied beyond its conventional application to manage all the roads in a municipality. This is clear testament to the high appreciation in Sweden of the efficiency of private ownership and management of low volume roads. The Akersberga residents are quite pleased with their PRAs and the quality of their roads.

International experience

Apart from Sweden and Finland, few countries have explicit legal arrangement for the management of low volume private roads. Some provinces in Canada, e.g., Ontario, share costs with local residents when they have organized themselves into local road boards. In apartheid South Africa, commercial (white) farmers received grants to share in the cost of maintaining their rural access roads. This system is now under review as there are many rural areas that have no roads at all. In urban areas in South Africa, there is a recent experiment to transfer ownership of streets to the residents of the streets—“Street Bodies Corporate” (Clifford 1998). It is based on similar principles to those applied to the administration of housing, i.e., residents will manage not only their own buildings but also their streets. Each Street Body Corporate or PRA elects representatives who meet periodically with each other and the city management. The concept aims to empower individuals “to be responsible for their own local affairs through participatory democracy”, and engender “respect for shared property and resources.” Street expenditures are shared between the PRA and the municipality.

Similarly, along the lines of the Swedish model, some of the Baltic States and countries in Eastern Europe, e.g., Estonia and Romania, which are struggling with the deterioration of the rural road network, are exploring the possibility of establishing a network of private roads.

In Zambia, as part of an effort to sustainably improve the condition of the road network, and increasingly involve the private sector in infrastructure management, the setting up of community rural road associations is being experimented with. So far, a substantial amount of spot improvement has taken place including repair of bridges, culverts and fords, and more than 20 road associations have been formed. These associations will receive cost-sharing grants for maintenance from the National Roads Board (NRB) that manages the road fund to help cover the expenses of technical supervision and materials, which are not locally available such as cement for the repair of culverts. A high-level delegation from Zambia visited Sweden in 2000 for the purpose of assessing the usefulness of the private roads system. The Zambian Government is now considering including a provision for the establishment of private roads in their Roads and Road Traffic Act which is currently under revision. The NRB believes there is scope for the establishing PRAs also in urban areas. The Board has been approached by residents of high to middle income neighborhoods in Lusaka who request assistance in improving their roads. These are areas that often are given priorities in road rehabilitation in developing countries. Establishing PRAs would mean that these roads would become less of a drain on public resources. The PRAs could thus potentially serve as model for organizing management of low volume roads in both urban and rural areas of developing countries.

Notwithstanding the examples from Canada, South Africa, and Zambia, only Finland, which “inherited” the Swedish legal system, has fully adopted and adapted the Swedish concept and model of private roads.¹⁹ Three quarters of the Finnish road network are designated as private roads (280,000 kilometers). A total of 700,000 of Finland’s 5 million inhabitants live along these roads, and another half million people rely on them to reach their vacation homes. Finland’s Private Roads Act was modernized in 1962. It governs the use and management of roads that have more than one owner. These roads are managed by road cooperatives. The legal framework requires compulsory participation of all property owners who live along a private road and the main transporters (Isotalo 1995). The road cooperatives operate much the same as the Swedish PRAs (see Box 4).

In Finland, about one third of the private network has been legally established as road cooperatives. About 87,000 kilometers of cooperative roads (17,400 cooperatives) receive financial support from the central government, a municipality, or from both. Similar to Sweden, the cost of operation and maintenance is low. Cooperative members rarely complain about the condition of the road because they know the trade-offs. This can be contrasted with cases where the management of previously private roads have been transferred to the national road administration. In such cases demands for upgrading, surface dressing or an asphalt pavement have been made almost as soon as the users no longer have to directly pay for the cost (Isotalo 1995).

¹⁹ The similar legal, institutional and financial framework for private roads in Sweden and Finland stems from their common legal heritage, which derives from the fact that Finland was part of Sweden until 1809.

Box 4. Sakkola road cooperative

Sakkola road cooperative in the southern Finland municipality of Karjalohja owns a four and half kilometer road. The cooperative has 35 members. Only five families are permanent residents. The rest own holiday homes, or forest or farm properties along the road. Because most of the permanent residents are old, the cooperative—its account and maintenance works—is managed by a trustee from a neighboring village. The annual maintenance costs, including regravelling and snow plowing, is about US\$ 3,000. The Government grant covers about 45 percent of the cost. The municipality provides another 15 percent and the rest is split among the 35 members, depending on property size and road use. The trustee bills about US\$ 200 per year. A supervisor from the National Road Administration inspects the road every two years.

Source: Isotalo 1995

Conclusions

A strong argument can be made in favor of property owners associations managing and maintaining low volume roads—private ownership can reduce the cost of maintaining roads to less than half the cost of government provided roads and significantly increase the kilometers which receive regular maintenance. Increasing efficiency and effectiveness of public expenditures and working in partnership with the private sector are highly relevant for both developed and developing countries. 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 governments get a better road network at lower cost.

The Swedish model shows that a well-structured institutional framework for private ownership of low-volume roads can bring impressive results. Such a framework should include a law on private roads, and financial and technical incentives. The Swedish and Finnish experiences both point to the pivotal importance of political will and skill. Without support at the highest level, the Private Roads Acts would not have been updated and financial support would likely have waned. The Swedish NFPPRA performs a very useful role in leading the national dialogue on private road issues and defending the interests of its member road owners. As representative for almost 400,000 properties corresponding to at least half a million votes (in a country with 9 million inhabitants), politicians are willing to listen.

But most developing countries do not have anything close to an institutional or legal framework for low volume or community roads. Grant support to road improvements is in many countries offered through various donor supported community funds. After the roads have been improved, the financial and technical support ends, because it is assumed that the communities will maintain the roads that serve them. This has, in many cases, been disappointing. There is no reasons why more developed and 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.

In summary, in order to bring low volume roads under efficient and effective maintenance, there is a need to go below the level of local governments and tap community initiative and dedication. The PRA concept is very simple and can be replicated easily. But to work it requires an enabling legal framework and strong political commitment. Money for cost-sharing grants is helpful but it is not the most critical component of the model.

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