

## Policy Paper 2.4

### Financing of the Road Sector

#### Executive Summary

The current situation in Afghanistan is that road users pay no specific taxes on vehicles, fuel and spares. This Paper reviews road financing issues, and makes proposals for a policy on road financing in the short term, as well as outlines a policy for the medium term.

The premise of the paper is that the Government should introduce ordinary fuel and vehicles taxes, but that this for administrative reasons will take some time to realise. For that reason and also on account of the need for raising additional moneys in the near future for financing the maintenance of the road network, the Government will have to consider the introduction of road user charges, i.e. direct charges on road users.

Five different options based on road user charges are evaluated. Indicative numbers suggest that for the near future, it will only be possible to recover maintenance (including operations) costs by way of road user charges in Afghanistan. It is possible that road user charges in a medium term perspective may be used to recover both routine and periodic maintenance costs. Full cost recovery by way of road user charges is not an option for Afghanistan for many years to come.

Six different criteria are used to assess the options considered. The outcome of the assessment is that the preferred option in the short term is to introduce tolls to finance long term maintenance contracts of rehabilitated roads. In a longer term perspective, systems based on conventional road user charges (e.g. a surcharge per litre of fuel) are viewed as superior to systems based on tolls. They are better in order to minimise fraud, and administrative costs are small. Therefore, in the medium term the best option is a system comprising surcharges on fuels and vehicles, which may be considered once a regime of taxation of fuels on road users has been imposed and a functioning vehicle register is in place.

#### Recommendations:

A system for the imposition tolls on vehicles using national roads, which have been upgraded and/or rehabilitated, should be introduced in the near future. The toll revenues should be used to finance the contracts for routine maintenance (including operations) of these roads, following completion of the upgrading and/or rehabilitation works, and the tolls should be set to provide for full financing of these contracts. The system should allow for a specific contract to be financed exclusively by the tolls collected on the road concerned, as well as cross-subsidisation between different roads, which have been upgraded or rehabilitated.

#### Actions:

A complete design of the recommended new system, including draft legislation, should be prepared. Additionally, a plan for its implementation should be prepared. The World Bank should be approached for the financing of this design and plan, under the Emergency Transport and Rehabilitation Project (ETRP).

## **Purpose**

This Paper reviews road financing issues, and makes proposals for a policy on road financing in the short term. It also outlines a policy for the medium term.

## **The Current Situation in Afghanistan**

The current situation in Afghanistan is that road users pay no specific taxes on vehicles, fuel and spares. Until recently and in theory, Afghanistan had a self-financing system for roads. The pedigree was a toll system implemented in 1974<sup>1</sup>, which generated funds for the central revenue fund, but did not contain any elements of earmarking. The tolls were collected by way of a system of toll stations scattered throughout the country. As from 1999, a new system was implemented by way of a new regulation replacing the previous one<sup>2</sup>. The new system continued the previous toll collection system, but also introduced earmarking. The toll revenues were to be spent on construction, reconstruction and maintenance of paved highways as well as the maintenance of other paved roads. Toll collection was organised by the MPW and the tolls were viewed as a source of revenue for the Ministry of Public Works (MPW). Through a decision by the High Council of Ministers on September 23, 2002 this road toll system was abolished<sup>3</sup>.

Additionally, mention should be made of that separate charges are imposed on trucks at present, which are collected at ‘toll’ stations. The charge is per ton of the payload of trucks as a proxy for the value of the transport contract. This charge, which is still being collected, is for the benefit of the Ministry of Transport, and not the road sector.

## **Background and Assumptions**

Most countries finance the construction and maintenance of public roads by way of appropriations from the government’s central revenue fund. Road users pay various taxes on vehicles, fuel, vehicle-usage (generally in the form of weight-distance taxes, but also paid as tolls), and on spares for vehicles. Whilst these taxes are specific (and separate from ordinary taxes on income, capital and consumption), they are normally not earmarked. They generate income for the central revenue fund of the government.

The policy of imposing taxes on fuel and vehicles used by road users are based on the following premises:

1. They ensure an efficient use of roads
2. Since they generate revenues for the central revenue fund, the government may allocate the revenues for expenditures in a rational way.
3. The deposit of the revenues into a single central revenue fund promotes proper cash management.

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<sup>1</sup> *Toll Fees for Motor Vehicles*, Official Bulletin, No. (238), dated 7 October 1974

<sup>2</sup> *Regulations for Collecting Toll Fees*, Official Bulletin, No. (786), dated 13 July, 1999

<sup>3</sup> Decree General No. 43 of September 23, 2002, Special No. 13, (1381 H.Q)

The second and third arguments have traditionally been used to oppose the earmarking of the revenues of taxes on road users for the road sector. However, there are nowadays many examples to be found around the world of how road users pay charges which generate revenues which are not for the benefit of the central revenue fund, but are used directly to finance road works. There are numerous different variants.

There are mainly two reasons for this development. Firstly some countries have decided to introduce a self-financing system for their roads. In these countries, the road sector is viewed essentially as a public utility, and a new system of governance and control has been introduced similar to that of a utility<sup>4</sup>. Secondly, in many -- often developing -- countries the governments have failed to allocate adequate amounts of funds for road maintenance through the ordinary budget process resulting in a deterioration of the road network. To halt this development, the main financiers of road investments, the International Financing Institutions (IFIs), have started to promote various schemes for ensuring that adequate amounts of funds are being allocated for road maintenance. These schemes typically involve the introduction of road user charges (i.e. earmarked charges on road users), which are collected and allocated by way of an agency of the state, generally referred to as a road fund. The sponsors of these arrangements normally assist with the introduction and enforcement of a new system of governance and control to ensure that there is proper use of funds and cash management.

Whilst Afghanistan at present does not impose any taxes on road users, it is assumed that the Government will do so as soon as possible, and that the structure and levels of the taxes on fuel and vehicles will conform to internationally established norms. The revenues generated by these taxes will be for the benefit of the central revenue fund, and will be used to finance government expenditure, including expenditure on roads. The introduction of such taxes will, however, take some time, for reasons explained below.

In the meantime, the Government will have to address the problem of how to ensure adequate funding for road maintenance in the near future<sup>5</sup>. A number of projects for road rehabilitation will be completed soon, and maintenance will have to be initiated immediately thereafter. This Paper examines if road user charges could be an instrument for solving this problem, and therefore identifies and reviews various options for financing of the public road network by way of such charges.

The options considered only include charges on users of roads. In some countries, charges are imposed on those who indirectly benefit from a road, e.g. industry or land owners along a road. Systems based on charging industry are being phased out (e.g. in the Russian Federation) as they are seen as not promoting economic efficiency and often inadequately satisfy the 'benefit' principle, i.e. that those who benefit should pay (see further below). The withdrawal of (part) of the economic rent generated by roads in the form of increased land values is difficult, and normally yields small sums of money<sup>6</sup>.

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<sup>4</sup> The two prime examples are New Zealand and Namibia.

<sup>5</sup> The driving force behind the need to review road user charges is the very high cost burden that Afghanistan will be facing once the roads, under present reconstruction programmes, will require maintenance. In the near future these costs will amount to US\$ 10 million p.a. later rising to over US\$ 100 million p.a. See further the Background Document, Section 5.5, and the Annex to the Overview Paper for Roads.

<sup>6</sup> One variant of this approach is the road association to be found in Scandinavian countries. Local roads are run by and financed by the owners of the properties served by the roads.

## Options

The available options involving road user charges are, in principle:

1. Conventional road user charges (i.e. surcharges on fuel, annual charges on vehicles, and sometimes other charges related to vehicle usage.) Note that these charges are not taxes as the revenues are channelled back to the road sector, as discussed further below. Conventional charges are to be found in quite a number of countries, but only one country in the world has implemented a fully-fledged system based on conventional charges, i.e. New Zealand.
2. General tolls, i.e. toll systems which are similar to the one in place until September last year. These systems are very rare in an international perspective<sup>7</sup>.
3. Private sector financing. A concession is awarded to a separate legal entity to build and/or operate a road for a period of time. Normally, the costs of the entity are recovered by way of tolls which it collects directly itself. This approach is common in Europe, the US and East Asia for roads with high levels of traffic, as well as for expensive infrastructure such as bridges and tunnels.
4. Road tolls on specific beneficiaries of road works. For example, tolls are only collected on bridges, on new roads or on rehabilitated/upgraded roads, i.e. on those parts of the network where the road user can see a clear benefit of the road works. Note that these tolls are collected for the benefit of the government and roads in general, and are not necessarily used to defray the expenses of the road works concerned. This system is to be found in e.g. Pakistan.
5. Road tolls for financing specific contracts for road works. For example, toll revenues are used to finance contracts for maintaining and operating specific parts of the road network. In Afghanistan such tolls could be imposed on roads which have been reconstructed and upgraded, and where the road users could identify the benefits of the improvement as well as the maintenance required to sustain that improvement. There are two variants. In one variant, the toll revenues from different roads are pooled and used to finance a number of similar maintenance contracts. In the other, the toll revenues collected on a specific road are used exclusively to finance the contract for that particular road. This second option is very close to option 3. The main difference is that for option 3, the private entity is (normally) expected to bear the traffic risk. In option 5, the state is the risk taker.

The following should be noted:

1. To implement any of these schemes legislation will be required to enable the state to impose the charges or tolls or to empower a private entity to collect tolls.
2. The realisation of any of these options would generate additional funds for financing of the road sector, in particular, and the public sector, in general. The

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<sup>7</sup> One example is Lao PDR. Tolls collected at toll stations on the main highways of the country are earmarked for road maintenance.

incidence of these options would be on road users and/or on those who benefit indirectly from road use.

3. With the exception of option 3 (the private/concession option), a mechanism is required for how to channel revenues back to the road sector, bypassing the ordinary appropriation process of the government. The mechanism should comprise a governance system to ensure that the funds are allocated appropriately and a control mechanism to ensure that the moneys are not misused. There are several alternatives. One is similar to the mechanism used until recently in Afghanistan. The money goes to the road authority, which may spend it in terms of a plan/budget approved by parliament/cabinet. Another alternative is to vest the power to allocate the funds in a separate entity, i.e. in a road fund. There are numerous examples of road funds around the world, e.g. in Africa, Latin America and Asia (although it should be noted that in reality most road funds actually have limited powers as to what decisions they can make<sup>8</sup>). For all options (except 3), an account separate from the ordinary government account is required. This account is sometimes referred to as a special deposit account<sup>9</sup>.
4. For all options, a mechanism, a regulatory regime, is required for how to set the level of the road user charges (including tolls and conventional charges).

### **What Should Road User Charges Recover?**

The basic principle of regulatory regimes for road user charges is that these are to be set so as to recover identified costs (seen in a longer perspective), as well as ensuring a reasonable return on invested money in the case of private sector financing (option 3). The following are the alternatives to be found in different countries:

- routine maintenance (including operations, i.e. snow removal, etc.).
- routine and periodic maintenance<sup>10</sup>
- all maintenance and capital costs for construction and/or reconstruction, i.e. 'full' cost recovery.

In order to determine what is feasible in Afghanistan indicative data will be used with reference to the national road network of the country.

1. The average daily traffic on these roads varies between 300 vehicles up to about 3,000 vehicles. Roughly speaking 70% are cars, 8% are buses and 22% are buses.

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<sup>8</sup> The two main exceptions are the Namibian Road Fund Administration (NRFA) and TransFund New Zealand. NRFA can also set the level of the road user charges generating funds for the road fund, subject to the legal requirements. In New Zealand cabinet must approve any changes in the road user charges.

<sup>9</sup> Many road funds do not operate in terms of a separate account, but rely on transfers from the central government account.

<sup>10</sup> Periodic maintenance mainly refers to new overlays, which are periodic cost and required after a period of between 6 to 10 years.

2. The average cost of routine maintenance per year and km is estimated at between US\$ 2,700 (300 vehicles/day) to US\$ 5,000 (3,000 vehicles/day). The average cost of routine and periodic maintenance per year and km can be estimated at between US\$ 4,500 (300 vehicles/day) to US\$ 14,000 (3,000 vehicles/day), and the average cost of the sum of maintenance and reconstruction cost per km and year can be estimated, in vary rough terms, at as a minimum US\$ 20,000 per km and year.
  
3. Based on the toll rates that were applicable until 2002 in Afghanistan, a flow of traffic of 300 vehicles per day would generate about US\$ 800 per year and km, and a flow of 3,000 vehicles about US\$ 8,000 per year and km. Conventional wisdom indicates that affordable road user charges in a developing country is on average about 1 US cent per km<sup>11</sup>, which is in approximate terms 35% above the level applied in Afghanistan last year. Assuming that an affordable level of a road user charge for Afghanistan would also be about 1 US cent per km, then it can be estimated that a flow of 300 would generate as a maximum US\$ 1,100 per km and year and a flow of 3,000 would generate as a maximum of US\$ 11,000 per km and year.

These indicative numbers suggest that for the near future, it will only be possible to recover maintenance (including operations) costs by way of road user charges in Afghanistan. It is possible that road user charges in a medium term perspective may be used to recover both routine and periodic maintenance costs. Full cost recovery by way of road user charges is not an option for Afghanistan for many years to come (with the exception of limited road sections with high traffic intensity).

### Criteria for Assessment

The following criteria are used in order to assess the options:

- (a) Feasibility, i.e. can the option actually be implemented in the near future (say within a 2 year period). If an option is deemed not feasible, further assessment in terms of the following criteria is not made.
  
- (b) Efficiency, i.e. is economic efficiency improved, or not, if the option is implemented.
  
- (c) Benefit principle, is there are a clear relationship between those who pay and those who benefit.
  
- (d) Administrative costs.
  
- (e) The need to preserve the integrity of the system and minimise the risk of fraud.

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<sup>11</sup> Heggie, Ian & Piers Vickers (1998): *Commercial Management and Financing of Roads*, World Bank Technical Paper Number 409, The World Bank, Washington, D.C.

- (f) Governance, i.e. the need to ensure the proper use of the funds generated by the road user charges, including the setting of charges. This dimension is closely related to the mechanism used to channel revenues back to the road sector.

### Assessment

Criteria (a): Options 1 and 3 are deemed as not being feasible in the short term. The main reason for that option 1 is not feasible is that it is primarily based on charges on fuel and vehicles. Charges on fuel cannot be considered until taxes on fuel for vehicles are being or have been imposed. The efficient administration of such a system typically is based on an arrangement whereby the taxes, and therefore also the fuel charges, are collected by the oil distributing companies. Charges on vehicles require an effective vehicle register, which does not exist at present.

Since risks are considerable in Afghanistan at present, the private sector option is not deemed to be feasible. Such solutions will entail high tolls to recover the risk premium. The feasible options are hence the ones in which the state bears the traffic risks.

The remaining options, i.e. 2, 4 and 5, are, on the other hand, deemed as feasible options in the short term<sup>12</sup>. The feasible options therefore involve road tolls generating revenues for the government to be used in the road sector.

Criteria (b): The introduction of any of the three tolling options would improve economic efficiency. In view of that no taxes or charges are imposed at present, and all vehicle usage gives rise to economic costs (including road wear and damage, congestion and environmental impact), the imposition of taxes and charges on road users is justified from an efficiency point of view. Presumably option 2, which involves tolls on a system (or network) of roads, is better than options 4 and 5, which involve tolls on selected roads.

Criteria (c): All the remaining options satisfy the benefit principle, as already argued. However, from the point of view of road users, benefits can only be identified when there is a 'obvious' benchmark representing a situation without the road works concerned. In options 4 and 5, tolls are imposed on account of an improvement (reconstruction and upgrading) in the road network and/or the provision of maintenance and operations services, which yield benefits which are identifiable to the road user. On these grounds it may be argued that options 4 and 5 better satisfy the benefit principle than option 2

Criteria (d): Administrative costs associated with tolls are generally high, as they require the collection and administration of cash. There is, in principle, no distinction in this regard between options 2, 4 and 5.

Criteria (e): The integrity of a tolling system is difficult to ensure under the present circumstances in Afghanistan. Tolling systems are also exposed to the risk of fraud because of the handling of cash. Option 5 is the best system in this regard, as it allows for the contractor(s) for the road works to be engaged also in the collection of the tolls. Since the contractor is being paid by way of the toll revenues (albeit backed up by a government guarantee), he has a vested interest in ensuring the integrity of the system.

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<sup>12</sup> The main argument is the previous toll system, which was operational.

Criteria (f): General tolls (option 2) as well as option 4 require a mechanism for how to allocate the toll revenues back to road works. There is, in addition, a need to ensure that after that allocation has been made, the money is put to proper use. This is demanding in view of that the present planning, budgeting and follow-up systems of MPW operations are poorly developed.

Option 5 is much simpler in this regard as the money collected is tied to the financing of specific contracts. The main issue to be dealt with is how to set the level of the tolls to ensure that enough money is generated to be able to finance the contracts<sup>13</sup>.

The outcome of the assessment in terms of the indicated criteria, is that option 5 is the preferred one for the short term. It is recommended that both variants, i.e. that the tolls may both be linked to one contract (i.e. one road) or to a number of contracts (i.e. a collection of roads), be allowed for. The reason is that some roads are faced with specific demands, e.g. the road through the Salang tunnel, giving rise to the need to set much higher tolls than for other roads.

### **Assessment for the Medium Term**

As a whole, and over a longer term perspective, systems based on conventional road user charges are viewed as superior to systems based on tolls. They are better in order to minimise fraud, and administrative costs are small. Fully-developed conventional road user charges also have good efficiency properties. And these are also the reasons why most countries, which are moving away from traditional road financing and towards financing by way of charging road users, are making use of such conventional road user charges.

Therefore, in the medium term, the main option is the first one, an option which may be considered once a regime of taxation of fuels on road users has been imposed and a vehicle register is in place, including the related management capacity. However, as mentioned for this option to be considered in the medium term, it will be necessary to develop a robust allocation mechanism and an adequate system of control against misuse and fraud.

The finding that conventional road user charges are viewed as a superior option in a medium term also suggests (and is a further argument for) why a system of general road tolls (option 2) is not a good option in the short term. If such a system is introduced, it will eventually become more difficult to have it dismantled. Option 5, on the other hand, is easier to phase out, as it is effectively linked to the financing of a specific number of contracts. Since these contracts would be assumed to be for periods of some 4-6 years<sup>14</sup>, phasing out in a medium term perspective is more or less automatic.

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<sup>13</sup> A related issue is the relative level of the tolls imposed on different types of vehicles. The toll scale used in the system in operation in Afghanistan until 2002 was apparently acceptable to road users, and was also similar to the one used in many other countries.

<sup>14</sup> The initial contracts for road maintenance following rehabilitation should not include overlay (i.e. periodic maintenance) works. They should therefore not last for more than 4-6 years.

## **Recommendations**

A system for the imposition tolls on vehicles using national roads, which have been upgraded and/or rehabilitated, should be introduced in the near future. The toll revenues should be used to finance the contracts for routine maintenance (including operations) of these roads, following completion of the upgrading and/or rehabilitation works, and the tolls should be set to provide for full financing of these contracts. The system should allow for a specific contract to be financed exclusively by the tolls collected on the road concerned, as well as cross-subsidisation between different roads, which have been upgraded or rehabilitated.

This tolling system is viewed as an interim arrangement. In the medium term it is envisaged that the Government will introduce conventional taxes on fuel and vehicles. The Government may then also consider the possibility of introducing conventional road user charges (e.g. surcharges on fuel and vehicles) to ensure adequate financing of the preservation of the road network.

## **Actions**

A complete design of the recommended new system, including draft legislation, should be prepared. Additionally, a plan for its implementation should be prepared. The World Bank should be approached for the financing of this design and plan, under the Emergency Transport and Rehabilitation Project (ETRP).