Report No. xxxxxx-ECA

Improving the Management of Secondary and Tertiary Roads in the South East Europe Countries

Transport Unit, Sustainable Development Department
Europe and Central Asia Region

February 2008
CURRENCY EQUIVALENTS

Exchange Rates as of September 30th 2007

Currency Unit – Albanian Lek
US$1 = 87.13 ALL

Currency Unit – Euro
US$1 = 0.71 EUR

Currency Unit – Bosnian Convertible Mark
US$1 = 1.38 BAM

Currency Unit – Macedonian Denar
US$1 = 43.56 MKD

Currency Unit – Serbian Dinar
US$1 = 56.71 RSD

WEIGHTS AND MEASURES

Metric System

FISCAL YEAR
January 1st – December 31st

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ABBREVIATIONS AND ACRONYMS

ADF Albanian Development Fund
ANTP Albanian National Transport Plan
BEUR Bureau for Economically Underdeveloped Regions
BiH Bosnia and Herzegovina
DRI Department of Road Infrastructure
EBRD European Bank for Reconstruction and Development
ECA Europe and Central Asia, an administrative region of the World Bank
ECMT European Conference of Ministers of Transport (Part of OECD)
EIB European Investment Bank
EU European Union
FBiH Federation of Bosnia and Herzegovina
FNRR Fund for National and Regional Roads
FYR Former Yugoslav Republic
FYROM Former Yugoslav Republic of Macedonia
GDP Gross Domestic Product
IBRD International Bank for Reconstruction and Development, World Bank Group
IDA International Development Agency, World Bank Group
IFI International Financial Institutions
IFPRI International Food Policy Research Institute
MDG Millennium Development Goals
MoLG Ministry of Local Government
MoLGA Ministry of Local Government Administration
MoLGD Ministry of Local Government and Decentralization
MoLSG Ministry of Local Self Government
MoI Ministry of the Interior
MoPWTT Ministry of Public Works Transport and Telecommunications
MoTMAT Ministry of Transport Maritime Affairs and Telecommunications
MSP Municipal Support Program
MTEF Medium Term Expenditure Framework
NGO Non Governmental Organization
OECD Organization of Economic Co-operation and Development
PEIR Public Expenditure and Institutional Review
REBIS Regional Balkans Infrastructure Study
RS Republic of Srpska
SAP Stabilization and Association Process
SEE South East Europe
SEETC South East Europe Transport Community
SEETO South East Europe Transport Observatory
SOE State Owned Enterprise
SME Small and Medium Enterprises
TEN Trans European Network
TIRS Transport Infrastructure Regional Study
UNMIK United Nations Mission in Kosovo
USAID United States Agency for International Development
US$ United States Dollars
WB The World Bank
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EXECUTIVE SUMMARY

1. **The importance of the tertiary road sector in contributing to economic development and poverty alleviation efforts cannot be understated.** In Albania, forty-nine (49) percent of rural producers have stated that a lack of adequate transportation, primarily good roads, was their biggest marketing problem. In Bosnia and Herzegovina, there is discontent about the quality of the regional and tertiary roads, with complaints about the low quality of roads foremost amongst all public services. In FYR Macedonia, a recent survey has revealed tertiary roads to rank among the top three capital investment priorities in two-thirds of surveyed municipalities [twelve (12) percent listing as first priority, twenty-three (23) percent as second priority and thirty-one (31) percent as the third priority]. Other studies have supported these findings but also report positive differences in school enrolment, and frequency in use of health services, between areas with and without all-weather roads.

2. **Despite these findings, the tertiary road network in the SEE countries is under-funded and in very poor condition.** The decentralization to local governments of the responsibility for managing secondary (regional) roads, in some countries, and tertiary (local and municipal) roads has compounded the problems of inadequate maintenance. Local revenue sources, such as vehicle registration charges, have proved insufficient, administrative costs are too high, and managerial capacity is weak. The result is that more than half of the secondary and tertiary roads in these countries are in a poor or very poor condition. The situation is worst in Albania and Kosovo where over ninety (90) percent have been found to be in a poor or very poor condition.

3. **A review of the problems surrounding the failures to deliver a good quality tertiary road network reveals six recurrent themes:**

   (i) **Unclear responsibilities:** There is a lack of a clear legal framework in many countries and where it exists, confusion prevails due to ambiguities in allocating road sections to central or local government or between ministries;

   (ii) **Limitations in the planning framework:** This is associated with planning at the central government level without consultation at the local level. The planning process also suffers from not being comprehensive and coherent enough to weigh options, determine priorities resulting in neglected sections of roads and regions. This is especially manifest in the fact that the countries lack a clear policy framework for the rural roads sector;

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1 World Bank (2002a,) p.28.
2 World Bank (2002b).
3 Recent survey work in preparation of the Municipal Services Improvement Project in FYR Macedonia.
5 Responsibilities for managing secondary roads have been decentralized to the regional councils and the cantons in Albania and Bosnia and Herzegovina respectively.
(iii) **Inadequate Local Capacity:** many local government authorities and agencies responsible for the tertiary roads lack the necessary technical, planning and managerial capacity to adequately plan and maintain the road networks they are in charge of;

(iv) **Insufficient and uncertain maintenance funding:** in many cases, the sources of funding are erratic and unstable making the planning process difficult. At the same time, most allocations from the central government fall way short of the maintenance needs of the tertiary road network. In instances where resources are severely constrained, even with prioritisation, many priority lengths of the road network will remain un-maintained;

(v) **Lack of incentives:** The need for maintenance is not usually felt until roads have reached a state of total dis-repair. For political reasons, the construction of new roads offers more visibility and is usually preferred to maintenance; and

(vi) **Inappropriate Design Standards:** in many countries design standards for tertiary roads have been set at inappropriately high levels compared to the levels and type of traffic using them. As a result, later maintenance becomes expensive and difficult. Concurrently, the design and construction methods ought to be suited to the road class to avoid inefficient resource use.

4. **In addition, in many of the countries, there is no defined strategic context within which tertiary roads should be managed and financed.** This can be achieved by developing a *rural transport policy* that covers the management and financing of rural road infrastructure, as well as the operation of transport services on these roads. In most countries, rural transport policy is an integral part of the national transport sector policy. In Albania, it has been proposed that consultants hired to undertake project preparation for a secondary and local roads project prepare a draft strategy.

5. **There needs to be a clear delineation of responsibilities for the different parts of the road network.** The assignment of responsibility is normally based on review of the function and resulting classification of the road system. However, in many transition economies, the road classification system and the contents thereof are often out of date, with new roads not clearly assigned to road agencies, roads added to different categories for subjective reasons, and changes in the use and importance of different roads over time.

6. **A key first step is a review and updating of the functional classification system for all levels of the road network.** The process of assigning responsibility to road agencies should attempt to reconcile four conflicting objectives: to keep the various functional road hierarchies together; to maintain consistency with the country’s administrative structure; and to assign responsibility to agencies that have the financial and technical capacity to effectively manage the roads, and to align accountability with decision making capacity. **All necessary changes in the legal framework also have to be made to support any changes in responsibility and classification.**
7. The management of the tertiary road network should be endowed to an appropriate body with the resources to fulfill the mandate. Four clear models of management emerge from a review of the institutions used elsewhere for managing tertiary roads, which can be summarized as follows:

- **Management by a Central Agency** (Reclaiming legal responsibility for rural/district roads and transferring them either to a central government ministry, or an unit within the national road agency, or to a special-purpose rural roads agency);

- **Management through a Project Implementation Agency** (local governments to hand over responsibility for implementing their investment, and possibly also their maintenance, road programs to a specialized project implementation agency);

- **Management through Joint Service Committees** (Persuading local governments to join together to form larger operating units for the purpose of managing their road networks, e.g. to form joint-services committees); and

- **Management through involvement of the private sector** (Persuading local governments to contract out the planning and management functions to consultants).

8. Large tertiary road networks tend to be managed in the same way as the main or national road network. Smaller networks, as in many of the SEE countries, which lack the scale needed to support a technically competent tertiary road agency at the central level, and where there is a clear decentralization agenda, tend to be managed elsewhere either by a project implementation agency or a Joint Service Committee, supported by a central management department. Maintenance activities are then generally undertaken by the private sector, managed by the Local Government Units, under the guidance of the project implementation unit.

9. Good management of the network requires an Asset Management System. An asset, or road, management system, whether computerized or manual, defines a set of procedures for managing and maintaining a road network. The first step in the establishment of such a system is an up-to-date road inventory, which requires that all tertiary roads and the most important community (unclassified) roads are identified, recorded and mapped. Complementary information on the inventories such as the location of hospitals, markets and schools can also form part of the inventory.

10. The decision support system used should utilize, to the full extent possible, all of the data collected. In the context of tertiary roads, a simplified decision support system should be sufficient, commensurate with the resources available for road management (i.e. both technical staff and finance). The inclusion of health and education data offers the opportunity to make savings in the budgets for those bodies, by centralizing facilities and reducing transport costs. Such a system should be capable of assisting rural road agencies with estimating budget requirements for the following:

- Routine maintenance needs of the entire road network;
• Periodic maintenance needs for selected road sections, bridges, culverts, and other assets found to be in poor condition from the inspections/surveys;
• Investment requirements and priorities for the road network (rehabilitation, upgrading and new construction, if any); and
• Costs of administration (i.e., costs of running the road agency).

11. **It is important that the local communities are involved in the identification of priorities.** The sustainability of investments has been shown to improve when the local community is involved in project selection. Community leaders, chiefs or other responsible members of the community can be requested to submit lists of roads, bridges, and other road assets within their area as a prioritized list for consideration by the district administration. The community representatives are given simple instructions on how to select road sections and prioritize these prior to submitting the list to the project implementation agency or headquarters.

12. **The design standards for tertiary rural roads should reflect the context.** Standards are an economic, rather than pure engineering, choice and therefore given the low level of traffic on most rural roads, and the continual scarcity of funds for maintenance, the emphasis should be on the use of appropriate technical standards. Options should be evaluated for design standards which offer substantial accessibility benefits while lowering construction costs and ensuring that the future maintenance burden will not be so heavy.

13. **The generic problems surrounding the financing of tertiary roads can be summarized as being:**

- The transfer of funds from Central government to Local government is often erratic, unstable and in most cases insufficient to meet the needs. Funds for capital expenditure often reflect donor fund availability;
- The mechanism of transfer of funds from the central government often does not encourage any mobilization of local revenues;
- Local governments lack the leverage or the means to mobilize meaningful resources at the local level for maintenance purposes; and
- The planning process for the preservation of the road network has withered away and most efforts are now on the realization and allocation of funds for capital projects.

14. **The best model of financing for tertiary (rural) roads is highly dependent on a particular country.** The key to setting a policy framework for managing road networks is the realization that with constrained funding and specified target standards, there will be a finite limit to the size of the road network that can be maintained. By setting target standards and budget limits, road authorities effectively define the extent of road networks that can be maintained on a sustainable basis. Efforts should be made to increase options for local governments’ own revenue sourcing and increase support from the central government in financing of maintenance operations.
1. INTRODUCTION

The background to the study

1.1 The Road Network in the SEE countries is extensive, although of variable quality. The road network in the South East Europe (SEE) countries stretches for over 100,000 kilometers, of which some fourteen (14) percent are primary or arterial roads, twenty five (25) percent are secondary, or regional, roads and the remainder are tertiary, or local, roads. The proportion of the total network that is paved varies from twenty nine (29) percent in the autonomous province of Kosovo\(^6\) (hereafter Kosovo), thirty nine (39) percent in Albania, to sixty four (64) percent in Montenegro and FYR Macedonia (see Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Primary Roads (km)</th>
<th>Secondary Roads (km)</th>
<th>Tertiary Roads (km)</th>
<th>Total (km)</th>
<th>Percentage Paved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>3,412</td>
<td>4,471</td>
<td>4,979</td>
<td>12,862(^7)</td>
<td>39%</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>3,722</td>
<td>4,830</td>
<td>14,000</td>
<td>22,552</td>
<td>52%</td>
</tr>
<tr>
<td>Province of Kosovo</td>
<td>650</td>
<td>1,310</td>
<td>6,000</td>
<td>7,960</td>
<td>29%</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>909</td>
<td>3,781</td>
<td>8,496</td>
<td>13,186</td>
<td>64%</td>
</tr>
<tr>
<td>Montenegro</td>
<td>884</td>
<td>964</td>
<td>5,000</td>
<td>6,848</td>
<td>64%</td>
</tr>
<tr>
<td>Serbia</td>
<td>5,125</td>
<td>10,407</td>
<td>23,084</td>
<td>38,616</td>
<td>62%</td>
</tr>
<tr>
<td>Total</td>
<td>14,702</td>
<td>25,763</td>
<td>61,559</td>
<td>102,024</td>
<td>-</td>
</tr>
</tbody>
</table>

Sources: Consultant Reports, Government Statistical Yearbooks, WDI, IRF

1.2 The SEE region is crossed by the Trans-European Networks (TEN) and the SEETO Core Network. The Trans-European transport corridors were defined by the European Commission (EC) as the priority transnational axes to facilitate greater regional integration between members originally, subsequently extended to candidate and neighboring countries. In a similar manner, a Memorandum of Understanding was signed between the European Union and the governments of the SEE countries in June 2004\(^8\) to define a ‘Core Network’, comprising the TEN corridors in the region, and other strategic routes connecting national capitals, regional centers and the main ports and border crossings. The SEE Core road network amounts to 5,945 km, and the South East Europe Transport Observatory (SEETO) was formed in 2005 to determine priority investments on the network.

1.3 The main focus since transition has rightly been on the rehabilitation and development of the primary road network. Much of the emphasis in the road sector in the SEE countries in recent years has been on rehabilitation, upgrading, and new

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\(^6\) Kosovo and Metohija remains an autonomous province of Serbia under the protection of the United Nations, following U.N. Resolution 1244.

\(^7\) Excluding 2,500 km of municipal, or urban, roads.

\(^8\) Western Balkan countries refer to Albania, Bosnia and Herzegovina, Croatia, UNMIK/Kosovo, FYR Macedonia, Montenegro and Serbia. In this study, the reference to Western Balkan countries or SEE countries is undertaken to refer to all the above excluding Croatia.
construction on the primary road network, more specifically on the TEN corridors and the SEETO ‘core network’. This has also been the area, rightly so, that has received the primary share of investment, particularly from donors, reflecting the importance of these roads to national and regional recovery and the developing needs of the emerging market economies.

1.4 However, progress on the primary road network has often occurred to the detriment of the secondary and tertiary road networks. The considerable expenditures necessary to rehabilitate and upgrade the primary road networks, together with the costs of new construction, means that the secondary and tertiary roads networks have had little attention, and been allocated little resources. The result is that more than half of the secondary and tertiary roads in these countries are in a poor or very poor condition. The situation is worst in Albania and Kosovo where over ninety (90) percent are in a poor or very poor condition.

What are secondary and tertiary roads?

1.5 The orthodox approach to defining roads classifies them according to their function or traffic level\(^9\). While sources differ on the nomenclature used, the basic concepts on functional classification are similar\(^10\). Roads are classed as arterials, collectors and tertiary roads (See Figure 1). Arterials are major through roads that are expected to carry large volumes of traffic, and provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. Principal arterials would refer to freeways or as is the case in the SEE countries to the SEETO core road network discussed previously. Minor arterials would then be the national/main road networks which are not quite to freeway/motorway standards. These are also referred to as primary or main roads.

1.6 Collectors (as their name suggests) collect traffic from the tertiary roads and distribute it to the arterials. Collectors provide a less highly developed level of service than the arterials at a lower speed for shorter distances. Collectors are what are referred to as regional or secondary roads, and act as the roads connecting regions/municipalities to the next levels of the road network.

\(^9\) A more detailed presentation on functional classification issues is presented in Annex A.

\(^{10}\) Functional Classification is the process by which streets and highways are grouped into classes or systems depending on the type of service they are intended to provide.
1.7 At the bottom of the hierarchy are the tertiary roads which have the lowest speed limits and usually carry the least amount of traffic. The tertiary roads primarily provide access to land with little or no through activity. The tertiary roads are the lowest level roads connecting small towns, villages and communities within the municipalities. In many instances, reference is made in a review of the literature to “rural roads”. The interpretation in this study for “rural roads” is that these refer to “tertiary roads”, excluding urban roads.

Why are secondary and tertiary roads important?

1.8 The agriculture sector represents a significant part of the economies of the SEE countries. The contribution of the sector to GDP ranges from eleven (11) percent of GDP in Montenegro up to thirty (30) percent of GDP in Kosovo (See Figure 2). The agricultural sector is mainly reliant on efforts of farmers in rural areas, who presently face very poor quality infrastructure. Demographic data shows the majority of the population in the SEE countries lives in rural areas, up to sixty-five (65) percent in Kosovo.11

1.9 An inefficient rural transport system constrains agricultural productivity in a number of ways. Firstly, the high transport and transaction costs hamper the ability of the rural farmers to articulate with markets and forces them to settle on subsistence agriculture. In Albania, only twenty (20) percent of farmers sell some of their produce in the local market and only nine (9) percent of what they produce is sold12. Farmers in communities with poor road access end up selling to visiting merchants at very low prices, watching helplessly as their produce ends up getting spoiled, or choosing to produce only what they need. Secondly, proximity to markets influences the effective prices of both agricultural inputs and outputs. The benefits of an improved road network to the agricultural sector are manifest in better farm-gate prices to farmers (particularly for perishable produce), and better competitiveness. Purchase of inputs like seeds, fertilizers, pesticides and sale of outputs like the farm produce decline with increasing distance from markets. Other benefits accrue through the ready availability of fertilizers and easy access to seeds and pesticides. Much wider benefits to the agricultural sector are generated with changes in crop portfolio and the usage of better inputs and technologies.

1.10 Not surprisingly, recent surveys in the SEE region have revealed that rural inhabitants consider poor quality roads to be amongst the main impediments they face. In Albania, forty-nine (49) percent of rural producers stated that a lack of adequate transportation, primarily good roads, was their biggest marketing problem.13 In Bosnia and Herzegovina, there is discontent amongst the population about the quality of the regional and tertiary roads. Complaints about the low quality of roads

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11 2004 OSCE estimates; the only country where rural population is not a majority is FYR Macedonia (31% UN 2005 statistics)
12 World Bank (2007a),
13 World Bank (2002a,) p.28.
Improving the Management of Secondary and Tertiary Roads in the SEE Countries

tops the list among all public services; with the complaints almost twice as high as the next problems\textsuperscript{14}. In FYR Macedonia, a recent survey has revealed tertiary roads to rank among the top three capital investment priorities in two-thirds of surveyed municipalities [twelve (12) percent listing them as the first priority, twenty-three (23) percent as the second priority and thirty-one (31) percent as the third priority]\textsuperscript{15}.

1.11 \textbf{In addition to the agriculture sector, improved secondary and tertiary road networks can contribute in another six (6) broad area:} (i) the contribution to economic development; (ii) the contribution to poverty alleviation through the generation of higher incomes (both farm and non-farm based) and improvements in living standards; (iii) the contribution to regional integration by ensuring equal access opportunities throughout the country irrespective of terrain, affluence or ethno-political affiliations; (iv) the contribution to tourism which is an emerging sector in many of these countries; (v) the contribution to alleviating rural-urban migration; and (vi) the contribution to improved access to essential services like education, health, administrative functions, employment opportunities and family/leisure visit opportunities. A review of the findings from earlier studies is presented in more detail in Annex B.

What is the main objective of the study?

1.12 \textbf{The main objective of this study is to propose broad recommendations to client countries in the region for their consideration in improving the management and financing of their respective secondary and tertiary road networks.} These improvements should result in an increase in the efficiency of public spending, reductions in transport user costs, and facilitate greater access to markets, services and opportunities, acting as a catalyst for economic development and poverty alleviation. This work presents a broad review of the current management and financing of secondary and tertiary roads in the SEE region, the condition of the assets and proposes a broad reform strategy.

\textsuperscript{14} World Bank (2002b).
\textsuperscript{15} Recent World Bank survey work in preparation of the Municipal Services Improvement Project.
2. THE SECONDARY AND TERTIARY ROAD NETWORK

Introduction

2.1 Transport infrastructure in the SEE countries has suffered from conflict and its aftermath, exacerbated by inadequate resources. The conflict, which followed the break-up of the former Yugoslavia, destroyed or rendered unusable a significant part of the transport infrastructure in the SEE countries. The direct and indirect damage to the network has been exacerbated by inadequate expenditures, which led to severely curtailed periodic and routine maintenance on the entire network for a large part of the last two decades. At the end of the conflict, recovery operations focused available resources on the emergency repair of the primary road infrastructure, leaving little or no resources for the secondary and tertiary road network. Increased resources, as the economies recovered, were either used to upgrade the primary road network, or were rightly directed to the preservation of that network.

2.2 The starting point of other countries in the region made the transition process more difficult. Albania, at transition, inherited a road network that was limited in scope and quality, even by the standards of the region. Accordingly, the emphasis has been on upgrading, rather than returning the inherited network to the original design standard, which was unsuitable for the needs of a market economy. Initial road investments, mostly donor-financed initially, were concentrated on the main East-West (TEN Corridor 8) and the North-South corridor north of Durres. Subsequent investments, both from donor and domestic sources, were and remain focused on completing the north-south route, and constructing the strategically important route to Kosovo. The emphasis on new construction and upgrading resulted in the neglect of adequate maintenance, even on the newly constructed roads, and a significant maintenance backlog has been created on the entire road network.

What is the scale and coverage of the road network?

2.3 The road network in the Western Balkan countries of Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Montenegro and Serbia extends for 102,024 km. The road network in the SEE countries stretches for over 100,000 kilometers, of which some fourteen (14) percent are primary or arterial roads, twenty five (25) percent are secondary, or regional, roads and the remainder are tertiary, or tertiary, roads. The distribution of the road network in the individual countries is presented in Figure 3.

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17 This does not include thousands of undetermined lengths of “other” roads including forestry roads, mining roads and uncategorized roads.
2.4 Table 2 shows the road density comparisons (for all roads) in terms of road kilometers per 1000 sq. km and also in terms of road kilometers per 1000 people. In terms of road kilometers per 1000 sq. km, the Western Balkan countries are at an average of 563 km/1000 sq. km, and thus compare favorably with regional peers in the Europe and Central Asia region (580 km/1000 sq. km average) but fall well short of the OECD levels. On a different measure of road density, road kilometers per 1,000 people, Albania and Kosovo lag behind both regional comparators and the average for lower middle income countries.

<table>
<thead>
<tr>
<th></th>
<th>Road Density (km/1000 sq. km)</th>
<th>Road Density (km/1000 people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>657</td>
<td>3.5</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>427</td>
<td>5.6</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1646</td>
<td>12.5</td>
</tr>
<tr>
<td>Croatia</td>
<td>506</td>
<td>6.4</td>
</tr>
<tr>
<td>Estonia</td>
<td>1320</td>
<td>41.2</td>
</tr>
<tr>
<td>Hungary</td>
<td>1733</td>
<td>15.7</td>
</tr>
<tr>
<td>Kosovo</td>
<td>780</td>
<td>3.3</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>513</td>
<td>6.4</td>
</tr>
<tr>
<td>Montenegro</td>
<td>500</td>
<td>11.1</td>
</tr>
<tr>
<td>Serbia</td>
<td>500</td>
<td>5.2</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1007</td>
<td>10.2</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>580</td>
<td>8.6</td>
</tr>
<tr>
<td>Upper middle income</td>
<td>1076</td>
<td>9.2</td>
</tr>
<tr>
<td>Lower middle income</td>
<td>328</td>
<td>4.9</td>
</tr>
<tr>
<td>High income: OECD</td>
<td>1340</td>
<td>17.3</td>
</tr>
</tbody>
</table>

18 Excluding uncategorized roads
What is the current condition of the secondary and tertiary roads?

2.5 Under recent consultancy studies, attempts have been made to assess and quantify the condition of the secondary and tertiary road network through a survey in each of the countries. The interpretation of condition as being good, fair or poor is as follows: *Good* refers to roads substantially free of defects and requiring only routine maintenance; *Fair* refers to roads with significant defects and weakened structural resistance requiring resurfacing or regravelling but without the need to demolish the pavement; *Poor* refers to roads with extensive defects and thus requiring rehabilitation or reconstruction.\(^{19}\)

2.6 The recent survey results confirm that many of the secondary and tertiary roads in the Western Balkan countries are in poor condition. With the exception of Bosnia and Herzegovina and FYR Macedonia, more than half of the secondary and tertiary roads (rural roads) in the Western Balkan countries are in a poor or very poor condition.\(^{20}\) The situation is worst for tertiary roads in Albania and Kosovo where more than ninety (90) percent is in a poor condition.

2.7 Table 3 shows the summary road condition survey results for the secondary and tertiary roads (disaggregated by class) while Table 4 shows the summary rural (secondary and tertiary) road network condition (aggregated). The summary rural network condition is shown graphically in Figure 4. These findings are broadly similar to earlier studies depicting the generally poor condition of the secondary and tertiary road network.

**Table 3: Summary Road Condition Survey Results (Disaggregated)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Secondary Road Condition</th>
<th>Tertiary Road Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Good</td>
<td>% Fair</td>
</tr>
<tr>
<td>Albania</td>
<td>Refer to aggregated results</td>
<td></td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>47%</td>
<td>21%</td>
</tr>
<tr>
<td>Kosovo</td>
<td>74%</td>
<td>26%</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>56%</td>
<td>28%</td>
</tr>
<tr>
<td>Montenegro</td>
<td>45%</td>
<td>18%</td>
</tr>
<tr>
<td>Serbia</td>
<td>National Class II - not sampled</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Source: Consultants Survey Results (2007)*

\(^{19}\) World Bank (1988).

\(^{20}\) To align varying classifications, roads in very good condition are lumped with good and those in very poor condition are lumped with poor.
Improving the Management of Secondary and Tertiary Roads in the SEE Countries

### Table 4: Summary Secondary/Tertiary Road Network Condition (Aggregated)

<table>
<thead>
<tr>
<th>Country</th>
<th>Road Condition</th>
<th>% Good</th>
<th>% Fair</th>
<th>% Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td></td>
<td>0%</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td></td>
<td>53%</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>Kosovo</td>
<td></td>
<td>20%</td>
<td>6%</td>
<td>74%</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td></td>
<td>29%</td>
<td>42%</td>
<td>27%</td>
</tr>
<tr>
<td>Montenegro</td>
<td></td>
<td>18%</td>
<td>33%</td>
<td>50%</td>
</tr>
<tr>
<td>Serbia</td>
<td></td>
<td>8%</td>
<td>18%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Source: Consultants Survey Results (2007)

#### Figure 4: Secondary/Tertiary Road Network Condition (Aggregated)

What are the current traffic volumes on the networks?

2.8 Traffic volumes on the tertiary road network range from less than 100 vehicles per day on some unpaved roads to nearly 2,000 vehicles per day on some paved sections near to urban areas. Most of the tertiary roads have low traffic volumes, although the limited access raises the strong probability of significant suppressed demand. This situation dictates that an issue of great significance will be the delineation of the tertiary roads to identify those that are “lifeline” roads i.e. without which whole communities will either be cut off entirely, or where the next alternative route involves a considerable increase in time and cost. Other factors will include deciding the importance of the roads, e.g. in accessing important agricultural farmlands, tourist sites, served populations, presence of services, amenities and facilities etc.

2.9 In all the countries, traffic levels on secondary roads are higher than those on tertiary roads, ranging from between 250 to 4500 vehicles per day. Traffic levels on some secondary roads are as low as those observed on the tertiary road network. However, it is important that the re-classification exercises do not only take into consideration the amount of traffic but also the role that the road plays on a functional basis as part of the whole road network, e.g. connecting different regions/municipalities.\(^{21}\)

2.10 In terms of traffic composition, cars make up the majority of the survey traffic on the secondary and tertiary roads in all countries. The composition of the car traffic ranges from sixty (60) percent up to ninety (90) percent. In all the countries, buses and trucks are limited on the secondary and tertiary road network and do not exceed twelve (12) percent in any of the surveyed countries. Depending on the causal chain, this has implications on the proposed design standards for these roads. If heavy traffic is light, then less expensive design standards may be proposed for the tertiary roads. By contrast, if heavy traffic is light due to the condition of the roads, then the proposed design will need to reflect the possibility of heavier axle loads. This is particularly true for those roads that provide access to and from mines and forests.

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\(^{21}\) Re-classification refers to carrying out a re-evaluation exercise and assigning roads to their proper classes depending on their functional importance and/or traffic usage.
3. THE INSTITUTIONAL CONTEXT FOR SECONDARY AND TERTIARY ROADS

The Current Institutional Framework

3.1 There are four distinct roles to be filled in the management of a road network. The term and a description for each role which are provided below represent a way to identify the responsible bodies in the sector in each of the countries.

- **Owner/Road Authority:** The owner is generally defined as the entity responsible for policy, and the definition of the legal and regulatory framework, and ultimately for funding. In most countries, the owner or authority for primary roads is the Ministry of Transport or equivalent. Authority for regional roads is either with the Ministry of Transport or Local Government. Tertiary roads are often under the authority of municipalities or districts;

- **Administrator:** The representative of the owner or road authority with responsibility for effecting policies and regulations and ensuring that performance of the road system meets the policies and legal obligations defined by the owner or road authority. For the main roads, this could be a National Road Administration (or National Road Fund, if there is one);

- **Manager/Road Agency:** The entity responsible for planning activities to be undertaken, then supervising, and monitoring the activities. In some countries, especially for primary roads, the administrator and manager functions are often combined in one organization (e.g. the United States Federal Highway Administration, Finnish National Road Administration, and Swedish National Road Administration), with the regional, municipal or state offices acting as the managers; and

- **Suppliers/Contractors:** The entities, originally public but now increasingly private, that are responsible for the delivery of services or the undertaking of works that are selected, supervised and managed by the Manager/Road Agency.

3.2 Table 5 provides an overview of the distribution of responsibilities, using this template, for the secondary and tertiary networks in the SEE Countries.
Table 5: Ownership, Administrative, Management and Supply Function Providers in the SEE Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Road Class</th>
<th>Owner</th>
<th>Administrator</th>
<th>Manager</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>Main</td>
<td>State</td>
<td>MoPWTT</td>
<td>General Roads Directorate</td>
<td>Public/Private Sector</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>MoPWTT, Mol</td>
<td>Regional Road Authorities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>Mol</td>
<td>Communes/Municipalities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>Main</td>
<td>State</td>
<td>MoTC (FBiH)</td>
<td>Road Directorate</td>
<td>Public/Private Sector</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>MoTC (RS)</td>
<td>“Direkcija cesta FBiH” Republic of Srpska Roads (RSR)</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td>Kosovo</td>
<td>Main</td>
<td>State</td>
<td>MoTC (FBiH)</td>
<td>Road Directorate</td>
<td>Public/Private Sector</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>MoTC (RS)</td>
<td>“Direkcija cesta FBiH” Republic of Srpska Roads (RSR) in RS</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>Canton Ministries (FBiH) MoLG (RS)</td>
<td>Municipalities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>Main</td>
<td>State</td>
<td>MoTC</td>
<td>Fund for the National and Regional Roads (FNRR)</td>
<td>Makedonija Pat</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>MoTC</td>
<td>Fund for the National and Regional Roads (FNRR)</td>
<td>Makedonija Pat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>MoLSG</td>
<td>Municipalities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td>Montenegro</td>
<td>Main</td>
<td>State</td>
<td>MoTMAT</td>
<td>Roads Directorate</td>
<td>Crna Gora Put/Private Sector</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>MoTMAT</td>
<td>Roads Directorate</td>
<td>Crna Gora Put/Private Sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>Municipalities</td>
<td>Municipalities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
<tr>
<td>Serbia</td>
<td>Main</td>
<td>State</td>
<td>Ministry of Infrastructure</td>
<td>Public Enterprise for Roads of Serbia</td>
<td>Private Sector</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>Ministry of Infrastructure</td>
<td>Public Enterprise for Roads of Serbia</td>
<td>Private Sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>MoLSG</td>
<td>Municipalities</td>
<td>Public/Private Sector</td>
<td></td>
</tr>
</tbody>
</table>

3.3 The state is the owner of all public roads in each of the Western Balkan countries. It then delegates administrative functions to the relevant ministries, which without much variation are the Ministry dealing with transport to administer the main and regional roads; and the Ministry dealing with local government to administer the tertiary roads. Bosnia and Herzegovina presents a special case where Ministries are established for transport at the State level (BiH) and for each of the entities (FBiH and RS)22. The Ministry of the Interior is involved in the administration issues for tertiary roads in Albania and Serbia.

22 These arrangements were made under the auspices of the Dayton Agreement of October 1995.
3.4 The management of primary and secondary roads is generally undertaken by a centralized road directorate or public enterprise in nearly all the countries.\textsuperscript{23} Public companies/directorates/enterprises have been set up in all the SEE countries to act as the managers for the primary and secondary roads. The two exceptions are in Albania and in the FBiH where the secondary roads are managed at the regional level, by the regional councils and regional road units in the former, and the Cantons and the Cantonal Road Directorates in the latter.\textsuperscript{24}

3.5 Tertiary roads are currently under the management of the respective local government units. The management of the tertiary road networks, and the regional networks mentioned in the previous paragraph, were devolved to the respective local government units under decentralization initiatives in all the countries. Unfortunately, as the next section reveals, this initiative has not always had the intended outcome.

**The problems engendered by decentralization**

3.6 Since the early 2000’s, the SEE countries have moved towards decentralizing responsibilities for local service delivery to local government. This initiative, which has been supported by the donor community, has placed the entire tertiary network, and some of the secondary network, under the responsibility and management of the respective local government units. Unfortunately, devolution of responsibility has in most cases not been supported with matching fiscal delegation. One study in Albania focusing on the issues of decentralization found that while progress had been made, there remained a number of significant obstacles\textsuperscript{25}, conclusions which are equally resonant for the other Western Balkan countries. The salient findings pertinent to the management and financing of tertiary roads can be summarized as:

i. *The lack of implementation capacity and weak institutions*\textsuperscript{26}, delayed the adoption of decentralization measures due to fears that this may disrupt the delivery of local public services and/or have an unfavorable impact on fiscal accountability. Administrative capacity at many local governments is weak on technical, financial and management grounds;

ii. *The fragmentation of local government units and the undefined role of the regions in some countries*, which complicates a uniform attribution of responsibilities and potentially affects local public service delivery efficiency, fiscal transparency and fiduciary accountability;

iii. *The lack of a clear definition of specific responsibilities* and decision making powers, especially for shared functions, which has led to inefficiencies. Unclear assignment of responsibilities for some secondary and tertiary roads with confusion or disagreement as to who is responsible, leading mainly to under-provision of services;

iv. *The insufficient local revenue autonomy*, which has negatively affected fiscal and political accountability of local authorities directly to the citizens. Own

\textsuperscript{23} The management for the secondary roads also caters for the main/primary roads.

\textsuperscript{24} In Albania, the secondary roads are under the 12 regional authorities while in FBiH the secondary roads are under the cantons.

\textsuperscript{25} World Bank (2004b).

\textsuperscript{26} Including the absence of central coordination and the reluctance of the central bureaucracy to relinquish decision making power on micro-managing public services.
source revenues for many municipalities are very low. The worst affected municipalities are those in rural areas and those having low populations. Most municipalities have limited or no borrowing capacity or are heavily indebted from previous commitments and hence can not secure varied and competitive sources of funding;

v. **Inefficient transfer/grant system**, which renders the local government financing system unpredictable (and which still reflects a “gap-fill” type of approach), since it remains dependent on undesirable political and bureaucratic maneuvers. In addition to this, most legal frameworks regarding inter-governmental transfers are silent or at best ambiguous about the set-up or amounts. Monies transferred from the central government go into a general pot and there is no certainty that funds intended for use on tertiary roads maintenance are actually used for that purpose; and

vi. **There is little in the way of accountability** especially from municipalities as to how monies are spent. Making matters worse is the fact that access to information on the tertiary roads is difficult or non-existent at both the local and central government level.

**Limitations in institutional capacity**

3.7 This study identified limitations in capacity in many of the local government units (municipalities). Institutional capacity has several facets: One is the pool of skills, such as the size and aptitude of the labor force. Others are the soundness of the maintenance strategy – type, level and timing of intervention – and the managerial and operational efficiency with which the strategy is executed. These depend, in turn on such factors as government commitment, institutional structure, managerial ability, staff ability, accountability, and incentives.28

3.8 The transfer of road management duties to municipalities under decentralization, without the proper institutional framework and support, has contributed greatly to failures in the tertiary roads maintenance mandate. With few exceptions, it has not been cost-effective to maintain a highly technical, well paid motivated staff to manage the tertiary road network. The management and financial accountability mechanisms are weak, and there is little autonomy for staff to carry out their mandate without interference from the political processes. As a result, ad-hoc set-ups have materialized with some general departments or a few individuals put in charge of the tertiary roads with poor planning, little financial back-up, and consequently an abysmal failure in maintaining the tertiary road network. In addition, in some countries, excessive administrative staff has been hired, often resulting from political patronage, consuming the limited budget that is available.

**Weaknesses in the Legal Framework**

3.9 The legal framework for the roads sector in all the Western Balkan countries is provided by the respective Law on Public Roads. There are also supporting laws on local self-government and on local government financing in the countries. The applicable Laws on Public Roads in the individual countries are:

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27 In many cases, these are usually vehicle registration charges and other small revenues from local taxes, fines and business interests.

3.10 The main weaknesses of these laws is the failure to establish clear criteria for how the different classes of roads are to be classified (functional classification), how the transfer from one class to another should be implemented in practice and ultimately in failure to place unequivocal jurisdictional responsibilities. There are also specific laws on local government financing in these countries detailing how the municipality budgets will be funded. Specific loopholes in these laws relate to the fact that in most cases, the transfers to municipalities are not specified; and ultimately the finances enter a general municipality budget meaning that short-sighted planning at the local level leaves the tertiary roads highly exposed to neglect.

3.11 Weaknesses have also been identified with the laws on local government finance or on the provisions for financing in the laws on roads themselves. In most cases, there is no explicit clarification on financial responsibility in percentages, amounts to be transferred, whether provisions for equitable formulae can be applied etc. For example, in FBiH, many cantonal laws are as ambiguous as their Federation counterparts resulting in misunderstandings and creative misinterpretations. It is not clear in many instances, if a canton after reviewing a municipality borrowing proposal has to approve such a proposal explicitly, and if such an approval would constitute an explicit guarantee. Another example is that the Federation law that caps municipal borrowing at twenty (20) percent of the budget is creatively interpreted by many cantons and municipalities as referring to “debt service” and not as an absolute “debt limit”.

Limitations in the current categorization of roads

3.12 The different countries have individual approaches to functional classification of their road network. In Albania, the roads are classified into national (primary) roads and regional and tertiary roads. In Bosnia and Herzegovina, the roads are classified into main roads, regional roads, tertiary roads and unclassified roads. In UNMIK/Kosovo, the roads are classified into public roads (main, regional, tertiary roads and streets) and un categorized roads. In FYR Macedonia, the roads are classified into public roads (state and municipal); and those outside the scope of the law are noted as private roads, agricultural and forestry roads and unclassified roads. State roads are further sub-divided into motorways, expressways, main and regional roads

while municipal roads are sub-divided into tertiary roads and streets. In Montenegro, the roads are classified into public roads (motorways, highways, regional and tertiary roads and streets in settlements) and unclassified roads. In Serbia, the roads are classified into public roads (national and municipal roads) and unclassified roads. National roads are sub-divided into National Class I (traditional main roads) and National Class II roads (traditional regional or secondary roads). The municipal roads refer to the tertiary roads.

3.13 As discussed above, it is clear that the functional classification systems follow the traditional main/primary, regional/secondary and local/tertiary systems in various forms/presentations. The issues presenting the greatest challenges are setting the criteria for classifying these roads and the interpretations made in the application/enforcement process. The study revealed instances of ministry bodies being responsible for roads supposed to be under local authorities’ mandate and vice-versa. This unclear situation leaves many roads at the whims of decision makers who can either fund or neglect them depending on political expediency and not according to clear planning or prioritization. In all the countries, classification problems are present with a contingent need for a re-classification exercise. Roads with little traffic and less significant functional importance ought to be classified to a lower level, or even declassified and the converse is also true i.e. roads needing re-classification to a higher category due to higher traffic levels or greater functional importance.

Limitations in the design and construction standards

3.14 With regard to Design Standards, the standards available for design of roads seem best targeted for the main roads. It has not been established that any special design standards as appropriate for the less used rural roads are available. The importance of appropriate design standards is especially relevant to ensure that proposed designs take into account the usage of the roads. The sample traffic surveys on the tertiary road network in particular revealed relatively low levels of usage. A comparison of project alternative designs (lower designs vs. higher designs) would invariably yield higher benefit-cost ratios for the former. One study found that in considering project alternatives, providing low-quality (mostly rural) roads yielded benefit-cost ratios for national GDP that are about four times greater than the benefit-cost ratios for providing high quality roads30. Some of the secondary and tertiary roads were designed to comparatively high standards and later consequences have been that it has not been possible to secure the financial resources to maintain these roads in their advanced specifications state.

Limitations in the policy and planning framework

3.15 The planning frameworks in all the countries exhibit a lack of co-ordination. While the Specific Road Directorates and Ministries retain a direct interest in the management functions of the main and secondary roads, there is no clear framework for them to work with the municipalities in charge of the tertiary roads. In addition, the secondary roads suffer from being caught up in the middle of these two planning and management structures with instances of them being neglected by the state and taken over by the municipalities as and when funds are available.

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3.16 At the municipality level, planning and management structures are ad-hoc with each municipality deciding what form of management model works best. A common feature with tertiary road management in all the countries is that municipalities are in charge of small lengths of road network, which are mainly fragmented and spread over wide areas. This does not allow for feasible tertiary roads agencies since competent personnel and adequate resources cannot be mobilized at such a low level.

3.17 A look at Government Plans and Policies indicates that while governments have in place policies and plans for the transport sector in general, there is little in the way of addressing in more specific terms the issues concerning secondary and tertiary roads. None of the countries has a clear and coherent rural roads policy or rural development strategy which reflects the role of transport in place. As a result, the secondary and tertiary roads are mainly neglected in favor of emphasis action at the central level on the main road network. One positive arrangement on policy action is in Montenegro where the Minister for Transport recently instituted a Task Force to establish the status of tertiary roads with a clear mandate to document the existing structures of management and conditions of the network in the 21 municipalities. A report documenting the same and making summary recommendations for improvements has been prepared by the Government. In conjunction with the World Bank, the Governments of Albania and FYR Macedonia are in the process of initiating actions on secondary and tertiary road projects. The relevant policies and plans in the different countries are summarized in Annex C.

3.18 There are also co-ordination and communication difficulties between the different stakeholders in the tertiary roads sector. Efforts to include the local communities in the rural roads improvements process exist in some form in all the countries, but again with no clear policy guidelines. There is donor involvement in Albania, Montenegro and Serbia in the tertiary roads sector, but the standards followed and the quality and sustainability of the work varies by donor. In Kosovo, the Ministry of Agriculture and Rural Development has its own rural roads initiatives and many similar cases are noted in the different countries. This situation adds to the structural confusions when the lines of responsibility are not clearly defined and different players are all making uncoordinated efforts in running the tertiary road network.

3.19 There is no direct government policy in any country to include local communities directly. This leaves the initiatives to international organizations/ NGOs. The nature and level of participation differs depending on the development partner involved. An interesting example is an inter-municipal program entitled Municipal Support Program (MSP) in Serbia funded by the Government of Switzerland and operating in a few municipalities. This program established a working group on tertiary roads that carries out a mandate and work plan similar to that supposed to be done by a permanent municipal tertiary road management agency/company.

Weaknesses in the management of the assets

3.20 Posing what is arguably the biggest concern in the planning structures is the lack of a proper asset management system. In almost all the Western Balkan countries, there is no accurate and maintainable road management database covering the secondary and tertiary roads. Some prior road condition databases exist in Albania,
Bosnia and Herzegovina, UNMIK/Kosovo and Montenegro (mainly constituting the main and secondary road network) but have in many instances not been updated, expanded to incorporate tertiary roads, or computerized. As such, especially with regards to the tertiary road network, road lengths are not readily known, the classification of some roads remains a contentious issue and the condition and usage of the assets is not being appropriately monitored. Consequently, proper planning and prioritization for interventions cannot be made. In many municipalities, the agencies in charge of the tertiary roads rely on community reporting to address shortfalls in service conditions of the roads.

3.21 Summary analysis of the situation in all the countries does not reveal any specific attempts to carry out socio-economic analyses to determine priority actions and funding for the rural road network at local government level. With some few exceptions, there is little evidence to show that any prioritization is being made for maintenance based on traffic or importance of roads. Most maintenance actions are a response to community requests or political pressure. Little is happening in the way of prioritization on a cost-benefit basis in line with plans for short and medium term actions on the networks under the municipalities.

3.22 The rural roads sector in general lacks comprehensive and consistent data sources over time and among countries. There is a lack of clear information on the tertiary roads at both the municipality level and central level on key issues like: extent, location, condition, management structures, financing, planning processes, expenditures, procurement processes, quality control etc. In cases where information is available, it has in most cases turned out to be contradictory or disappointingly inadequate to assess the proper context of the tertiary roads sector. This problem is compounded by the fact that there is no requirement of the municipalities to prepare reports on the tertiary roads for collation, monitoring, record keeping and future planning at the central level.

3.23 There is also a noted lack of incentive on the part of many authorities to address maintenance needs. As roads deteriorate, road users do not immediately see the connection between the poor condition of the roads and increased operating costs. The authorities do not feel any immediate pressure to address the maintenance shortcomings until the roads reach a state of total dis-repair. In the process, new construction is given priority since it offers greater political visibility.

3.24 Quality control capacity is almost non-existent for most of the works being undertaken on the rural roads. To compound matters, materials laboratories are located at the central level in the capitals (e.g. Skopje in FYR Macedonia, Podgorica in Montenegro). As such, it is not considered cost-effective to obtain samples and carry them all the way to the capital and as a result quality control is rarely being done.

Weaknesses in service delivery

3.25 For service provision, there is no homogeneity in set-ups and there are varied degrees of public and private sector involvement in the maintenance of the secondary and tertiary roads. In the case of the main and secondary roads, public companies: Makedonija Pat in FYR Macedonia and Crna Gora Put in Montenegro carry out the maintenance activities while in the other countries, maintenance and
construction works are done by the public/private sectors or private sector only\textsuperscript{31}. For the tertiary roads, there is no uniform model or set-up, resulting in differences within municipalities, even in the same country. However, there is some form of private sector participation in the tertiary roads maintenance operations in all the countries. Some municipalities have a public/communal company undertaking routine maintenance works and tender out the winter maintenance, periodic maintenance and construction works to the private sector. Other municipalities retain actions for both routine and winter maintenance and tender out the other maintenance activities. And last but not least, some municipalities do not carry out any maintenance activities on force account at all, and tender all works to the private sector.

\textsuperscript{31} In Montenegro, Crna Gora Put won a tender to carry out the maintenance works for a 5 year period. Other private companies are involved in smaller scale maintenance operations.
4. THE FINANCING OF THE SECONDARY AND TERTIARY ROAD NETWORKS

What have the expenditures been in the past years?

4.1 Reliable and comprehensive information on secondary and tertiary road expenditures, at all levels, is not always available. Weaknesses in management systems means that there are often differences in the categorization of expenditures across local governments within the same country, and across countries, not all expenditures may be recorded within a local government unit, and often there is no distinction made between recurrent and capital expenditures. In addition, the information collected in the small sample of spending bodies in this study may not be entirely transferable for a whole country as expenditures vary across municipalities owing to differences in available financial resources and priorities attached to tertiary roads. For all these reasons, the tertiary roads expenditures presented in Figure 6 should be regarded as providing an indicative, rather than definitive, picture of actual expenditures (A more detailed breakdown of expenditures is shown in Annex D).

Figure 5: Road Expenditures in the SEE Countries (2001-2005)

4.2 Total expenditures on the entire road network as a proportion of GDP is low in nearly all the countries of the SEE countries. Expenditures as a percentage of GDP at 2005 reference prices are: 2.1 percent in Albania, 1.3 percent in Bosnia and Herzegovina, 1.1 percent in Kosovo, 1.4 percent in FYR Macedonia, 0.8 percent in Montenegro and 2.1 percent in Serbia.33 Expenditures in the road sector in Bosnia and

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32 For example, in Albania, there are 12 regional councils, and 36 district road units, and 364 communes and municipalities.

33 World Bank ECA website, assorted recent PEIRs and UN Kosovo government website.
Improving the Management of Secondary and Tertiary Roads in the SEE Countries

Herzegovina, Kosovo, FYR Macedonia and Montenegro are both low compared to what is recommended for countries at this stage of development.34

4.3 In addition, the primary emphasis in most of the countries has been on capital expenditure on recovering, upgrading or new construction on the primary network, to the comparative neglect of maintenance and the secondary and tertiary road networks. This in turn has increased the rate of network deterioration and the costs for road users, and has created a contingent liability of future rehabilitation costs. Without adequate maintenance, roads deteriorate at an increasing rate until reconstruction is necessary, at considerably greater expense than any short term saving in maintenance expenditure. Heggie and Vickers (1998) report that rehabilitating a paved road is three times more expensive than maintaining it, in current terms, and around 35 percent more in net present value terms. In addition, failure to maintain a paved road is estimated to increase user costs by a factor of three, in terms of additional time, fuel, and vehicular wear and tear.

4.4 The limited expenditures on the tertiary roads network have also been primarily capital expenditures, with little or no recurrent expenditure on maintenance. Reliable aggregate information on the split between capital and recurrent expenditure is particularly difficult. In the one country, where relatively robust information is available, Albania, the balance between recurrent and capital expenditures in the roads sector is skewed in favor of the latter. Local revenue sources, such as vehicle registration charges, are insufficient - only about 40 percent of what is needed in maintenance expenditures is actually expended on the tertiary road network at present, reflecting both the unfunded mandate created through decentralization, and the excessive level of administrative costs at the regional and district offices. The weak management and planning, generally undertaken without any consideration of the broader regional planning dimension also undermines the efficiency of spending in other sectors35; improving roads potentially realizes savings in education and health budgets, and improves quality, through facility centralization.

4.5 Serbia exhibits an increasing trend for road expenditures in general but the spending levels on tertiary roads remains low as all the other Western Balkan countries. An encouraging development in the case of Serbia is that as part of the implementation of the National Investment Program, for the period 2006-2007, the government set aside an equivalent of US$ 118 million for tertiary roads in the 143 municipalities. However, these funds are specifically for capital and not recurrent expenditures36, which is an endemic problem in the region. Subsequent information on actual expenditures on these roads is not documented nor is the commitment to provide a necessary allocation to maintain the improved roads.

4.6 Expenditures on tertiary roads are very low in Montenegro. As of 2005, average expenditures on tertiary roads in Montenegro were US$ 460 per km compared to a regional average of US$ 3,488 per km. The situation is the most extreme in the remote mountainous municipalities in the northern region. Some municipalities have increased spending on tertiary roads given their wider revenue bases e.g. Podgorica,

34 World Bank studies for countries with similar road under-funding mandates recommended minimum 1.9% to 2.5% of GDP; quoted in Brushett (2005).
Danilovgrad and Bar. However, most of the budget increases are for capital expenditures. The government has also established a capital expenditure budget for municipalities and invited municipalities to submit bids for funding for local infrastructure projects in the new financial year. Initial information reveals that there have been few requests for funding for tertiary roads in the requests received by the Ministry of Finance.

**What are the current financing arrangements?**

4.7 **Two main approaches are distinct in the financing of the roads sector: the budget approach and the road fund approach.** The budget approach is the most traditional and most widely used, especially in Europe. Given the experience with establishment of road funds in countries in a similar situation to the SEE Countries, the establishment of a road fund is not considered as the appropriate solution. In addition, while most of the institutional and management structures have been found to be weak, they are salvageable. Strengthening these structures by applying the recommended actions will make them much stronger and more responsive. This is also in line with the aspirations of the EU system where strong budgetary measures are in place and thus ensure appropriate distribution of resources among sectors. For the countries where Fund approaches are already operational i.e. in Bosnia and Herzegovina and FYR Macedonia, incorporation of stronger systems of prioritization, eliminating undue political interference, incorporating more efficient revenue collection systems and strengthening of the transfer processes will be critical.

4.8 **Under the Budget approach, the principle used is that roads are a public asset and hence expenditures on them are public expenditures that need to be covered by the national budget.** Transfers to local governments from the central government budget are the main source of domestic funding for rural roads in all the countries. However, the funds transferred and allocated for road maintenance are inadequate. In some instances, the procedures for transfer of revenues are not clear; and the allocations sometimes suffer from the malaise of preferential distribution to regions depending on political affiliations. One important issue will relate to clarifying the system for requesting budget funds from the Ministry of Finance and the need for accountability and audit mechanisms to account for the funds used.

4.9 **The most common sources for financing rural roads are central government transfers from the general budget, local revenues (from the local government and the community), and donor funds.** Central government transfers from the national consolidated budget account for the majority of the financing of the secondary and tertiary roads. For example, in Bosnia and Herzegovina for 2006, road fees (fuel fee and registration fee) collected in both entities of FBiH and RS was 121 million US$ and transfers to road managers accounted for US$ 86 million (seventy-one (71) percent)\(^{37}\). In Kosovo, the MTEF envisages the provision of around twenty-three (23) percent each year of forecast central budget revenue to municipalities in a form of intergovernmental transfers\(^{38}\). In FYR Macedonia, the funding scheme for local roads (excluding donations) and taking into account that the Bureau for Economically Underdeveloped Regions (BEUR) accounts on average for twenty-four (24) percent is seventy (70) percent to thirty (30) percent between central and tertiary government.

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\(^{37}\) Study data.

\(^{38}\) Kosovo Medium Term Expenditure Framework (2006-2008).
respectively. The central-to-local government transfer is through the Fund for National and Regional Roads (FNRR) and runs at an annual estimated Euro 8 million per year. However, in many cases, the local governments are unable to come up with the matching thirty (30) percent.

4.10 The financing arrangements in these countries provide strong incentives towards rehabilitation, upgrading or reconstruction as opposed to maintenance. This is because the implied or implicit understanding at central government level is that municipalities should be able to raise their funding for maintenance from their local revenues. A case in point is Montenegro where the central government provides support and funding for capital works on tertiary roads through the Department for Public Works and is in the process of establishing a capital infrastructure budget for municipalities. A related aspect is that most funding is “project-based” i.e. prior to or at the beginning of the fiscal year, amounts are allocated to the road sector on specific well-defined projects. Routine maintenance is not amenable to such pre-specification and thus it is very difficult for it to be bundled in by the municipalities and presented for financing.

4.11 Local revenues supplement the revenue for tertiary roads but are constrained by a narrow tax base in many of the municipalities. Municipalities can raise some revenues from property taxes, supplemental income taxes, construction land use, rental fees, fines etc. as decided by the municipal assemblies within the law. Additionally, in many instances municipalities retain all or a portion of the vehicle registration taxes collected in their principalities. However, these revenues are generally low and can not sufficiently match the maintenance needs for the tertiary roads. Donor funds for road maintenance have not been explicitly reported as part of the maintenance budgets in many of these countries.

4.12 Of the centrally collected road revenues, fuel tax revenues constitute the biggest source in all the countries. As examples, 2005 figures in Albania show a contribution of US$ 130 million (56 percent of all road user revenues). In UNMIK/Kosovo, for the year 2006, of the total US$ 165 million from road based revenues, fuel tax contributed US$ 140 million (85 percent).

4.13 The collected road revenues (special emphasis on fuel revenues) are directed into the governments’ general consolidated budgets. The variations/exceptions are in Bosnia and Herzegovina and in FYR Macedonia. In FBiH, road fees are automatically allocated to the road administration while in RS; stipulated percentages are allocated to different road managers. In FYR Macedonia, the share of the fuel taxes allocated to the FNRR is reviewed each year depending on government priorities. In all countries, the contributions from vehicle registration taxes tend to go directly to the municipalities but these have turned out to be a very low revenue source.

40 Excluding road tolls since these are not existent in all the countries
42 ECORYS (2007).
43 Of these funds, the shares for cantons and municipalities in the FBiH were 35% and 25% respectively while Putevi RS and municipalities received 30% and 3% of the shares in RS respectively.
44 REBIS (2003).
4.14 **One possibility for increasing revenues in the Western Balkan countries for secondary and tertiary roads could be through the proxy of fuel taxation.** To determine the feasibility for increase in fuel taxation in these countries, a comparison of the fuel tax prices against other countries in the region is presented in Figure 5 below. Diesel (Lux) and Petrol (Lux) stand for the diesel and petrol retail prices in Luxembourg respectively, and are usually considered the benchmark for new EU accession countries.45

**Figure 6: Fuel Price Comparisons (November 2006 prices)**

![Fuel Price Comparisons (November 2006 prices)](image)

Source: International Fuel Prices 2007 (GTZ 2007)

4.15 **Only fuel prices in FYR Macedonia show room for increase in taxation for both diesel and petrol products at 2006 reference prices.** For UNMIK/Kosovo, increase in taxation appears feasible for petrol only. For Albania, Bosnia and Herzegovina, Montenegro and Serbia, prices for both diesel and petrol are already at or above EU accession target levels and any further increases need to be considered with caution, with due regard to affordability.

**What are the financial needs?**

4.16 **The financial needs for the tertiary roads only in each of the countries have been estimated and are summarized in Table 6 below.**47 The recovery plans for the network (addressing backlog maintenance) assume a minimum 5 year program.48 The financial needs do not include for provisions of new construction. The estimates have been made to cover the backlog maintenance, followed by provisions for the normal routine/winter maintenance and periodic maintenance. Some provisions have also been made for the maintenance of bridges and tunnels on tertiary roads and are included in

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45 GTZ (2007).

46 Under the user pays principle, there is an issue with increasing taxes on diesel not used for motor vehicle purposes that would need to be addressed.

47 Backlog maintenance needs estimated with latest local road condition data, all other estimates from PEIR where available and where lacking, from new estimates using the asset based approach.

48 In the case of Serbia, the extensive network and condition of local roads may necessitate a minimum 10 year recovery framework implementation instead of the 5 year plan shown.
the total maintenance needs for each country. The financial needs are highest in Serbia (evidently more as a result of the extensive road network; and not so much to do with having the worst deteriorated tertiary road network). The total estimated tertiary roads maintenance needs for the Western Balkan countries are at an annual US$ 453 million. This calculation includes for the total recovery of the tertiary road network and for its continued annual maintenance. Once the backlogs are addressed in the assumed 5 year time frame, normal roads maintenance needs would drop to an annual total of US$ 175 million.

Table 6: Estimated Annual Expenditure Needs for the Tertiary Road Network 2008-2012 (million US$)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
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<tbody>
<tr>
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<td></td>
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<tr>
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<tr>
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<td>17.3</td>
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<td>27.2</td>
<td>27.2</td>
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<tr>
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<tr>
<td>Serbia</td>
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<td>128.0</td>
<td>128.0</td>
<td>128.0</td>
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<tr>
<td><strong>Sub-total (Addressing Backlog Maintenance)</strong></td>
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<td><strong>251.2</strong></td>
<td><strong>251.2</strong></td>
<td><strong>251.2</strong></td>
<td><strong>251.2</strong></td>
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<tr>
<td><strong>Routine/Winter Maintenance</strong></td>
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<td></td>
<td></td>
<td></td>
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<td>12.0</td>
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<td><strong>Sub-total (Routine/Winter Maintenance)</strong></td>
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<td><strong>103.9</strong></td>
<td><strong>103.9</strong></td>
<td><strong>103.9</strong></td>
<td><strong>103.9</strong></td>
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<td><strong>Scheduled Periodic Maintenance</strong></td>
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<tr>
<td><strong>Sub-total (Periodic Maintenance)</strong></td>
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<td><strong>70.8</strong></td>
<td><strong>70.8</strong></td>
<td><strong>70.8</strong></td>
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<td><strong>Total Maintenance Needs</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albania</td>
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<td>67.6</td>
<td>67.6</td>
<td>67.6</td>
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</tr>
<tr>
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<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Kosovo</td>
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<td>38.8</td>
<td>38.8</td>
<td>38.8</td>
<td>38.8</td>
</tr>
<tr>
<td>FYROM</td>
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<td>50.8</td>
<td>50.8</td>
<td>50.8</td>
<td>50.8</td>
</tr>
<tr>
<td>Montenegro</td>
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<td>65.7</td>
<td>65.7</td>
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<tr>
<td>Serbia</td>
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<td>180.4</td>
<td>180.4</td>
<td>180.4</td>
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</tr>
<tr>
<td><strong>Grand total (Total Maintenance Needs)</strong></td>
<td><strong>453.3</strong></td>
<td><strong>453.3</strong></td>
<td><strong>453.3</strong></td>
<td><strong>453.3</strong></td>
<td><strong>453.3</strong></td>
</tr>
</tbody>
</table>

Sources: PEIRs, Consultants’ Reports, WB Staff estimates.

What is the financing gap?

4.17 From an analysis of the expenditures and needs, the financing gap for the tertiary roads sector in the Western Balkan countries is estimated at an annual US$ 338 million (See Table 7 below). An expenditure-gap comparison graph is also presented in Figure 7 below.

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49 Total maintenance needs (addressing backlog, routine/winter, periodic maintenance plus provisions for maintenance of bridges/tunnels).
Table 7: Annual Financing Gap for Tertiary Roads (million US$)

<table>
<thead>
<tr>
<th>Country</th>
<th>Needs</th>
<th>Average Annual Expenditures (2001-2005)</th>
<th>Exp. (as % of needs)</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>67.6</td>
<td>29.8</td>
<td>44%</td>
<td>37.8</td>
</tr>
<tr>
<td>BiH</td>
<td>50.0</td>
<td>20.3</td>
<td>41%</td>
<td>29.7</td>
</tr>
<tr>
<td>Kosovo</td>
<td>38.8</td>
<td>19.6</td>
<td>51%</td>
<td>19.2</td>
</tr>
<tr>
<td>FYROM</td>
<td>50.8</td>
<td>14.1</td>
<td>28%</td>
<td>36.7</td>
</tr>
<tr>
<td>Montenegro</td>
<td>65.7</td>
<td>2.2</td>
<td>3%</td>
<td>63.5</td>
</tr>
<tr>
<td>Serbia</td>
<td>180.4</td>
<td>29.4</td>
<td>16%</td>
<td>151.0</td>
</tr>
<tr>
<td>Total</td>
<td>453.3</td>
<td>115.4</td>
<td>25%</td>
<td>337.9</td>
</tr>
</tbody>
</table>

4.18 In the region, on average, a quarter (25 percent) of the maintenance needs for tertiary roads are currently being met. The financing gap for tertiary roads in Montenegro is significant reflecting the realities of poor funding for these roads in many of the municipalities over past years. If the asset value of the tertiary road networks are to be preserved, urgent measures are needed to close the gaps in all the countries before long term deterioration increases the fiscal burden in all the countries.
5. CONCLUSIONS AND RECOMMENDATIONS

5.1 This chapter summarizes the conclusions and recommendations for the management and financing of secondary and tertiary roads in the SEE countries. It begins with the conclusions made about the institutional and management framework. The discussion then evolves into the key issue of decentralization in the SEE countries and makes some recommendations as to how this process can be strengthened. Recommendations are then made on the need to develop a strategy and policy for the sector and on introducing some good management practices.

5.2 The follow-on is for recommendations as to how the management structure can be improved. A discussion is provided on the management models available and their possible suitability for the SEE countries. The management discussion also details the need to revise or develop appropriate design standards for rural roads.

5.3 With regards to financing of the sector, the discussion summarizes the findings on the inadequacy of the finances in the sector in comparison to the needs. A financing approach is suggested that can help in addressing the maintenance backlogs for the secondary and local roads and in general addressing the weaknesses in the financing of the sector. Recommendations are also made as to how improvements in spending can be achieved.

5.4 A summary generic strategy and action plan is then presented with possible menu options for improving the management and financing of the secondary and tertiary roads sector. Targeted selection of actions that suit individual country situations will potentially help in addressing the management and financing challenges endemic in the sector.

Strengthening the Institutional and Management Framework

Conclusions on the Institutional and Management Framework

5.5 Firstly, the secondary road network is managed better than the tertiary road network in the majority of the countries. This situation reflects the fact that the secondary road network is managed centrally in all but two of the countries, by the body responsible for primary roads. The two exceptions are Albania (under the regional road authorities), and the Federation of Bosnia and Herzegovina (under the cantons). The modest geographical size of both does not offer tangible efficiency benefits for a three tier system, as in place now, and consideration ought to be given to revising the management arrangements for secondary roads in both countries.

5.6 For the tertiary road network, the institutional and management structures are weak at the local level; with the result that proper planning, monitoring, prioritizing and management to ensure the effective maintenance is lacking. There are unclear jurisdictional responsibilities, an uncoordinated planning framework, inadequate local capacity, lack of incentives and inappropriate design standards. Delegating responsibilities to municipalities for tertiary roads without
ensuring the right technical and management capacity and without the proper channels established between the central and local governments has undermined the rationale of the decentralization initiative. Effective decentralization hinges on a balance of political, institutional and fiscal responsibilities. The unfortunate scenario with the SEE countries is that decentralization efforts have been partial and while administrative responsibilities were assigned to local governments, fiscal and resource allocations remain inadequate.

**Strengthening the Decentralization Process**

5.7 The SEE countries have demonstrated a commitment to continued support for decentralization. Decentralization is one of the eight (8) key elements of the Bank’s public sector strategy and the links to poverty alleviation are stated as: (i) increased resources for development purposes; (ii) improved service delivery; and (iii) empowerment of the poor to direct the use of government resources. To achieve reforms and improvements in the delivery of services under a decentralized form of government, the Bank approach described in Box 1 below offers a good basis for the SEE countries.

**Box 1 Support for decentralization as part of good governance**

“In the decentralization process, local governments must be given sufficient fiscal resources to discharge their new responsibilities. Political decentralization is also necessary, as it promotes accountability and governance reforms at the local level. This is especially important for rural areas because most rural people have had a weak voice at the national level……To promote the development of effective institutions for rural development, the Bank will support:

- Strengthening of local administrative capacity;
- Transfer of responsibility for services to the administrative level closest to the users;
- Enhanced accountability for public administration at every level;
- Participatory approaches, including increased political space and participation in decision making bodies for women;
- Economies of scale in government functions; and
- Appropriate private sector involvement in the delivery of public services, with public accountability.”

In addition, the strategy mentions the benefits of Community Driven Development (CDD) by stating that “Decentralized development efforts such as community driven development (CDD) offer the potential for increased community participation in all aspects of rural development as well as offering greater inclusion of all social groups in rural decision making”.

*Source: Reaching the Poor: A Renewed Strategy for Rural Development (World Bank, 2003)*

5.8 Earlier work on decentralization in the region has also yielded some valuable recommendations at a strategic level. This work underscores the importance of: (i) maintaining the momentum of decentralization reforms; (ii) defining and attributing specific responsibilities for local governing units asymmetrically i.e. in accordance with their respective implementation capacity; (iii) creating the conditions for improvement of local government accountability; and (iv) using the funds transfer system as an effective policy instrument. All these tools have special relevance for the local governments in their management of the local road network; and in providing the strategic bedrock for dealing with many of the problems identified in the sector.

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50 World Bank (2004b)
Need to Develop a Strategy and Policy

5.9 The lack of a strategy and policy for the development of the tertiary road sector is a gap in all the countries. The respective governments need to define the strategic context within which the rural roads will be managed. This can be achieved by developing a rural transport strategy that covers the management and financing of rural road infrastructure, as well as the operation of transport services on these roads. A generic rural transport strategy is shown in Annex E. A coherent rural roads strategy would be drawn from engaging all agencies and institutions with an interest in the rural roads at the national, regional, district and local community level. In addition to central and local government, this would include organizations dealing with agriculture, mining, tourism, transport and rural development. Formulation of the strategy should ideally engage all the donors as well as NGOs.

5.10 With a rural transport strategy in place, the next step is to address the issue of unclear responsibilities in the sector. Assigning responsibility is based on having an accurate road inventory, precise and appropriate functional classification, designation of responsible road agencies and clarification of the relationship between these agencies and the parent ministry.

Introducing Good Management Practices

5.11 The first step is an up-to-date road inventory database in each country that covers all the classes of roads. On top of databases usually prepared for the primary and secondary roads, there is a necessity that all tertiary roads and the most important community (unclassified) roads are identified, recorded and mapped. The inventories should include details on the surface type, condition, drainage structures and usage (volume and type of traffic) on individual roads. Given the nature of the rural road traffic, provision should include traffic classes of, animal carts, tractors, motorcycles, bicycles and pedestrians. Complementary information on the inventories such as the location of hospitals, markets and schools should also form part of the inventory. It is important to standardize the road inventory and keep it as simple as possible to avoid incurring extra costs on collecting large pieces of information that may not be useful. The production of 1:100,000 scale maps to illustrate the roads under each municipality are recommended to avoid any ambiguity in ownership and responsibility.

5.12 The second step is to use the road inventory to review and update the functional classification systems for all levels of the road network. For tertiary roads, there are three informal classes of road currently; (i) local access roads – the key ‘lifeline’ rural access roads, which carry relatively heavy traffic, and should be reclassified as part of the national network i.e. as secondary roads; (ii) local rural roads – which would remain the responsibility of the relevant local Government Unit, where shown to be relevant; and (iii) those roads that are essentially private access roads, which should be declassified. In many of the countries, there are a number of roads serving mines or forests and hardly used by other road users. Maintenance of these roads becomes the responsibility of the respective mines or forest authorities who derive the maximum benefit out of these roads. The process of transfer of responsibility for forest or mine roads has to be coordinated in line with the functional re-classification exercises and backed by changes in the relevant road laws.
5.13 The functional classification review process should be accompanied where necessary by the strengthening of the legal framework to ensure that any future changes to the classification of roads are clear and adhered to. The laws should be explicit in referring to the criteria for each class of road; main, secondary and local; and in describing the procedures under which transfer from one class to another or designation for new roads occurs. Responsible agencies for each class of road should also be mentioned including clear chains of command, responsibility and funding. Any changes to the road network, at any level, would need to be clearly reflected in the ownership record.

5.14 A road database and asset management system should be established, maintained and updated. Data should continuously be collected on road inventory and basic traffic count data. Pavement condition should be monitored on a rolling basis and the revolving functional importance of different roads in the network e.g. populations served, villages accessing road etc monitored to aid network wide maintenance priorities. This Asset Management System should support the preparation of both annual and multi-annual plans for maintaining the tertiary road network taking into account the condition, function, available funding and prioritization. The use of economic decision models like the World Bank’s Roads Economic Decision Model for the tertiary roads and the Highway Design and Management model (HDM-4) model used for the main and secondary road network would be instrumental in assisting effective prioritization processes. Other simplified approaches like multi-criteria analyses and cost-effectiveness approaches may also be used to determine investment priorities.

Improving the Management Structure of the Sector

5.15 It is important to note that any recommendations for a management model are strongly linked to the whole institutional set-ups of the roads sector. As such, it will be more relevant that any proposals fit in with the national transport plans, strategies and laws of individual countries. This in turn has obvious implications for any ongoing road sector reforms in these countries. The initial recommendations presented here are intended to aid the dialogue and promote the debate as countries seek to establish what would work best for their road network management. While there are some similarities in the Western Balkan countries, a one-size-fits-all model is not considered appropriate. Different factors need to be taken into consideration including but not limited to: the level of fragmentation i.e. total number of municipalities; total size of the road network; capabilities of the local governments; capabilities of existing institutions in the road sector; and the level of cooperation that exists between municipalities in given regions of the country.

5.16 The management of the tertiary road network should be endowed to an appropriate body with the resources to fulfill the mandate. Four clear models of management emerge from a review of the institutions used elsewhere for managing tertiary roads, which can be summarized as follows:

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51 Multi-annual plans would constitute plans for periodic renewal, rehabilitation and reconstruction while annual plans would deal primarily with the routine maintenance aspects.
(i) **Management by a Central Agency** (Reclaiming legal responsibility for rural/district roads and transferring them either to a central government ministry or to a special-purpose rural roads agency);

(ii) **Management through a Project Implementation Agency** (local governments to hand over responsibility for implementing their investment, and possibly also their maintenance, road programs to a specialized project implementation agency);

(iii) **Management through Joint Service Committees** (Persuading local governments to join together to form larger operating units for the purpose of managing their road networks, e.g. to form joint-services committees);

(iv) **Management through involvement of the private sector** (Persuading local governments to contract out the planning and management functions to consultants).

5.17 Further detail on these management models with examples of use worldwide and a summary of the advantages and disadvantages of each model setup are presented in Annex F. It is important to note that the application of these models is not mutually exclusive. For a given country an innovative combination may yield better benefits than the application of only one particular model. For example local governments can form a JSC which hires a project implementation agency; or a centralized agency may hire consultants from the private sector to plan and program annual maintenance.

**Management by a Central Tertiary Road Agency**

5.18 The first model involves a single agency at central government level, or as a department in the Road Agency, and is particularly attractive where local capacity is weak. It solves the problem of size and also provides access to some central government budget resources (for capital works). The agency coordinates all central government interventions and classifies and re-designates roads. This has been adopted in both Bangladesh (Local Government Engineering Department), and in Ghana (Department of Feeder Roads) – in the management of large networks. However, this model conflicts with the decentralization goals that many Governments have adopted in recent years, although this could be partly countered by decentralizing staff and involving the local government units.

5.19 An alternative, which is a variation, would be for management of the tertiary roads to be retained by the local government agencies, but with a strong central focal coordinating body for tertiary roads. This could be a central government ministry, a specialized department with the national road agency or a separate implementation agency that provides central support to local government units on policy, technical advice and guidance. The role of this coordinating body would not be to usurp the duties and responsibilities of the local government units managing the tertiary roads but to provide much needed back-support on technical, managerial and financial issues. However, this agency could also coordinate management activities for the local government units to allow them to achieve a better service at lower cost, thereby establishing an informal Joint Service Committee. This model would not be contrary to the decentralization objectives.
Management through a Project Implementation Agency (PIA)

5.20 The second option is one where the central government ministry delegates project implementation to a Project Implementation Agency, sometimes referred to as a contract management agency. This model is common in francophone countries, where the implementing agency is generally referred to as an AGETIP (Agence d’exécution des travaux d’intérêt public contre le sous-emploi). The agency generally has a board composed of well-known members of the public (none of whom are government representatives), a general manager appointed by the board, other line managers (administrative, financial, and technical managers), and staff who are paid salaries equivalent to the private sector. The agency is set up as a private, non-profit association and pays no taxes. It works on behalf of municipalities who delegate certain functions and sets priorities for projects. The AGETIP recruits consultants to carry out detailed engineering, invites bids and awards contracts for both supervision and implementation of works, manages the contracts, and pays the contractors directly from a special account opened in its own name. The agency is subject to bimonthly management and financial audits, and an annual technical audit. The Albanian Development Fund is currently filling this role in the implementation of a World Bank project in Albania.

5.21 The adoption of the AGETIP model on its own may afford benefits in some of the Western Balkan countries. For example, in Albania, the Albanian Development Fund already has a key interest and stake in the tertiary roads sector. The implementation of improvements in institutional strengthening at the local level and channeling of financing for tertiary roads may be coordinated through it. Although, ideally the agency needs to be a specialist tertiary roads agency. This management model has potential and could be extended to some of the other SEE countries, although a focal body for policy in the line ministry would still be needed.

Joint Services Committees

5.22 The third model, in which local governments cooperate to procure goods and services on behalf of all their members, is the Joint Service Committee. This is fairly common in developed countries, as well as in Jordan and South Africa. In most cases, the central government ministry remains in charge of the planning and coordinates the tertiary roads. It encourages the local governments to come together (through the use of financial incentives) to form a Joint Services Committee for providing services for participating local agencies (although this also happens informally between communities in some Scandinavian countries to realize economies of scale).

5.23 Under this arrangement, resources are pooled and individual agencies are better able to plan and manage their affairs and therefore can let larger and more cost-effective contracts for procurement of goods and services. Services may extend to the provision of road maintenance, waste disposal and other services as the participating members deem appropriate. The group of local government agencies generally assigns the tasks of organizing procurement and supervising implementation to one of their members, or to a higher level of government, or to a local consultant. The collaborative arrangement is sometimes made on an informal basis, although there should be a written agreement among the participating agencies.

52 The Government of Albania has backed this arrangement for the proposed “Secondary and Local Roads Project”.

34
Involvement of the Private Sector

5.24 The final option is for the management of the tertiary road network to be contracted out to the private sector. Local governments remain involved in setting priorities and liaising with the chosen consultants. This system requires certain contract size to attract competent consultants hence Joint Service Committee option may be required as well. The private sector model is not considered to be an option for the SEE countries at this time because the private sector industry is not sufficiently developed or advanced to take on management duties. The setup also negates the role that local government feel they have to play in public service provision at a management level.

Revising the national design standards

5.25 With regards to design standards, recommendations are made for drafting rural road design standards that reflect the context of low traffic levels on the rural roads and the economic connotations. Standards are an economic, rather than purely engineering, choice and therefore given the low level of traffic on most rural roads, and the continual scarcity of funds for maintenance, the emphasis should be on the definition and use of appropriate technical standards. There is thus the need to design and maintain rural roads in relation to specific levels of serviceability in terms of access for vehicles or in providing what are known as “all-weather roads”. Options should be evaluated for design standards which offer substantial accessibility benefits while lowering construction costs and ensuring that the future maintenance burden will not be so heavy. The prime considerations for the rural roads are therefore reliability and durability rather than the usual engineering design considerations for width and speed. Drainage provision is also an important element in ensuring the durability of the road asset and in helping to sustain the maintenance efforts. With new design standards in place, downgrading of existing roads is a possibility that may need to be considered by the management authorities.

5.26 A key point with regards to design standards relates to a few roads that carry a significant amount of heavy goods vehicles and these are predominantly those leading up to forests and mines. Engineering design would call for higher standards on these roads but it is highly illogical that local governments should be made to pay for the extraordinarily high costs of providing higher design pavements, and for repairing and maintaining these roads. Under the user-pays principle, it would be more prudent if the big beneficiaries i.e. coal mine owners and forest logging companies contribute to the cost of constructing and maintaining these roads.

Improving the financing of the sector

5.27 This report has revealed the inadequate and uncertain maintenance funding for the secondary and tertiary roads. In many cases, the sources of funding are erratic and unstable making the planning process difficult. At the same time, most allocations from the central government fall way short of the maintenance needs of the tertiary road network. For the tertiary roads, an annual financing gap of almost US$ 244 million has been identified with current spending meeting only thirty-three (33) percent i.e. one-third of the needs, excluding new construction. The sustainability of all roads revolves around the timely execution of routine and periodic maintenance which
is in turn dependent on the existence of a steady and adequate flow of funds, irrespective of source. Addressing this issue is therefore of paramount importance.

5.28 There is also a need for considerable investment to address the maintenance significant backlog in the maintenance of the secondary and tertiary road network. Some form of cost-sharing arrangements should exist with local governments and beneficiaries. Cost-sharing between the central government and local institutions gives the latter a powerful incentive to maintain the roads and is an important way of leveraging scarce resources. Diversification in financing sources is in itself a welcome thing as best use is made of pooling together scarce resources. From the point of efficiency, this also presents the chance to local governments to leverage better in sharing costs with the central government and with road users/beneficiaries. In addition, to ensure sustainability, there is a contingent need to identify in the medium-to-longer term increased domestic sources of financing for the associated maintenance costs.

5.29 The recommended financing approach is four-fold:

(i) strengthen the budgetary process and discipline;
(ii) investigate options for increasing revenues from road user charges and related sources;
(iii) ensure adequate cost sharing between central and local governments; and
(iv) ensure an appropriate balance between capital and recurrent expenditure.

5.30 Strengthening budgeting process and discipline can follow proposals for a Public Expenditure Management System that caters for short, medium and long term planning. In the long term, financing plans for the roads sector should be embedded in the country long term sector strategies. In the medium term, multi-year budgeting processes e.g. through Medium Term Expenditure Frameworks (MTEF) should include clear targets for expenditures on roads. Short term action plans will be linked with the usual annual budgeting process. Financial planning at local government (municipality) level is particularly weak; and technical assistance efforts from the central government should be made to address this issue.

5.31 In support of an effective budgeting process, the following measures are further proposed in the budgeting process:

- The total budget envelope should be explicit and set prior to determining individual spending allocations;
- Expenditure allocations between and within sectors are consistent with government policies and priorities;
- Budget discipline should be such that allocations for the roads sector and specifically maintenance are adhered to as per planned government policies and strategies without short-term political interference;

53 Government Plans and Policies as expressed in rural transport strategy and as part of the national development strategy critical

36
• Resources are reallocated from lesser to higher priority programs and from less to more effective programs\textsuperscript{54}; and

• Efficiency of public sector operations should be comparable with the private sector\textsuperscript{55}.

5.32 Options for increasing road user revenues from increases in fuel taxation at November 2006 reference prices show possibilities in FYR Macedonia (diesel and petrol) and UNMIK/Kosovo (petrol only). More in-depth study into the repercussions of increasing fuel tax revenues will need to be considered before any firmer proposals can be made. It will also be important to establish ways for municipalities to raise higher own source revenues whether from vehicle registration charges or charges for road side use and developments. The central government must actively support local government efforts to collect own source revenues. This can be done by widening the scope of local taxation, charges, fines and levies that can be made under the laws on local self-government financing. In other instances, the central government can seek to actively support the local governments to enforce these laws by building awareness and capacity since some municipalities seem unaware of the possibilities available to them.

5.33 Cost-sharing arrangements will have an integral role in any financing strategy if the maintenance of the tertiary roads is to be sustainable in the long run. Cost-sharing between the central government and local institutions gives the latter a powerful incentive to maintain rural road infrastructure and is an important way of leveraging scarce resources at all levels. Whilst national roads are normally financed from central government sources, tertiary roads are only partly financed from central sources. The balance often comes from local government budgets or from contributions (financial or in kind) by local communities. The governments must step up efforts to engage the local governments and communities directly in the maintenance of their tertiary roads as key stakeholders in the development process. There are two main reasons for this: firstly, cost-share arrangements enable the funds from central sources to “stretch” to cover more km of roads by encouraging local governments to mobilize additional revenues at the local level; secondly, tertiary roads not only benefit road users but also those who live on adjoining land (e.g., by providing easy access to markets, etc.), and therefore such communities should have a vested interest in having a good road. There are three basic approaches to cost sharing arrangements between central sources and local governments:

(i) The central funds pay a fixed proportion of “approved” expenditures. This is the most common arrangement in many countries;

(ii) The proportion paid by central funds is determined by a formula that normally takes account of the ability of the local government to finance the expenditures out of its own local tax revenues; and

(iii) Central funds only finance certain items of expenditure or do not pay for certain types of expenditure e.g. land acquisition costs.

\textsuperscript{54} Effectiveness of secondary and local roads emphasized and thus require appropriate budget allocations

\textsuperscript{55} The proposed management models for the rural roads should follow a commercial management style where value for money and accountability are of prime importance
5.34 The above cost share arrangements distinguish between maintenance and new construction expenditures. Given the situation in the SEE countries, it would be more appropriate to focus initial efforts on maintenance. With the wide differences in revenue bases of municipalities, the cost sharing approach is recommended where the central government pays a proportion that takes account the ability of local governments to contribute from their tax bases. In the case of unclassified roads (e.g., village or community roads), the local communities could be mobilized to pay their share by providing labor at a proportionately reduced cost, or other services in-kind (e.g., materials). There should be efforts to create appropriate incentives to engender community ownership, empowerment and local resource mobilization. Communities are usually more forthcoming with in-kind contributions, including labor for the construction of a new bridge or road than for maintenance. Similarly, communities are unlikely to perform tasks voluntarily if they were once paid to do so. Reliance on unpaid volunteer labor for regular maintenance is not sustainable.

5.35 The need for greater emphasis on maintenance expenditures needs to be reflected in the budget categorization and allocations. While increased support from the central government is important in the improvement of the tertiary road network, some form of accountability is necessary to ensure that the money for tertiary roads is not diverted elsewhere. Local authorities can retain the right to determine priority expenditures in their budgets, and the share of recurrent and capital spending for roads. However, this should not occur to the detriment of road maintenance. There is an absolute need to decouple the budgeting of maintenance and rehabilitation from new construction, and for Local Governments to have to record expenditures by category.

5.36 Maintenance spending arrangements are very important and the priority should be on maintaining the “core rural road network”. Available monies should be expended first on ‘core’ or lifeline roads in a good or fair condition and if funds remain, roads in poor condition can then be rehabilitated. This is critical to avoid a cycle of chronic spending on rehabilitation and an ever increasing mandate that can not be met.

Improving the effectiveness of spending

5.37 There needs to be a clear delineation between the role of Government and that of the institution responsible for managing the road network. Government should restrict itself to the roles of setting the policy agenda and furthering the necessary reforms and legislative actions. Management functions should rest with “company like” bodies backed up by competent staffing, with a clear mandate of strong performance. The management bodies should be given autonomy to run independently without undue interference from government.

5.38 Government bodies and institutions should stay in the administration and management roles for which they are best suited; and all maintenance works should ideally be let to the private sector that is best placed to handle it on a competitive basis. This holds true for both the secondary and tertiary road network.

56 A good example of this is the New Zealand system where the central road fund finances 50% of all qualifying maintenance but varies this between local authorities depending on the size of their local tax base. The Department for Transport in the UK also utilizes what is known as a “Formula Spending Share” to determine how local roads funds are disbursed.
For secondary roads, the monopoly of public enterprises in maintenance service provision is non-competitive and inefficient and ought to be eliminated. Private sector participation in road maintenance can offer the following advantages:57

- Strong incentives for improvements in performance and economy;
- A more flexible operating environment in terms of managing resources, including greater flexibility in scaling resources to suit changing demands, thus facilitating improvements in cost-effectiveness;
- Relief to the government from the burden of direct management responsibilities for large work forces and equipment fleets;
- For maintenance works, the need to commit funds for maintenance contracts, with less likely diversion of resources to other activities;
- Political support for adequate and more stable levels of funding for road works, provided that road user groups private sector stakeholders can pressurize government to maintain failing roads; and
- A better prospect for developing a lasting institutional capacity, in the form of a pool of local contractors skilled in providing efficient and effective services.

5.39 Maintenance operations should be contracted out to the private sector as this offers improved efficiency and better service. Initially, this could be on the traditional input based type of contracting58, but over time, output and performance based road contracting (OPRC) could be introduced59. The latter approach defines a final product and it is up to the contractor how to achieve this. Therefore, work selection, design and delivery are all his responsibility. Hence, the choice and application of technology and the pursuit of innovative materials, processes and management are all up to the contractor. This allocates higher risk to the contractor compared to traditional contract arrangements, but at the same time opens up opportunities to increase his margins where improved efficiencies and effectiveness of design, process, technology or management are able to reduce the cost of achieving the specified performance standards. There are also reductions in administrative costs with OPRCs especially those arising from requests from contractors to deal with increases in costs of inputs. More importantly, setting up OPRCs (whether for routine maintenance or for rehabilitation and subsequent routine maintenance) would ensure that more stable financing is available since governments (be they local or central) would feel obliged to honor existing contracts.

5.40 The key to ensuring that the selected management models will succeed relies on the realization that with constrained funding, and specified target standards, there will be a finite limit to the size of the road network that can be maintained. Where budgets are severely constrained, as they are in the Western

57 Harral et al. (1986).
58 The basis for an output specification is that the road should meet certain performance specifications – road space characterized by measurable functions- which are demanded by road users. With road space is meant the width and geometry and with functions, roughness, road friction, load carrying capacity and the like. The outputs are to be specified such that over the road’s life cycle, total economic benefits are maximized, subject to assumptions about future traffic and composition.
59 In the region, a good example of pilot projects under OPRC is in Serbia where routine and winter maintenance on 1,331 km of regional roads has been carried out at a cost of approximately 3,615 Euro per km, a 25 percent saving in unit costs per km for the latter.
Balkan countries, either the size of the sustainable road network is reduced, or the condition of the road network will have to deteriorate to a level dictated by the available funds. The latter is undesirable hence there is a need to identify and define a core local road network (of secondary and tertiary roads) that is critical for the rural populations and access centers and ensure that these “lifeline” roads are accorded first priority and attention. The main priority should always be to maintain these roads because they are functionally important, and usually represent the only link for a particular community or where an alternative link entails much higher user costs. This approach has been found to give the greatest returns, and should not be overlooked in favor of more expensive spending on rehabilitation or upgrading road sections or building new roads.

5.41 Another key to success will rely on addressing the issue of lack of information and data sources especially on the tertiary roads by instituting reporting requirements. Municipalities should prepare reports, preferably on an annual basis on the tertiary road networks under their jurisdiction, the condition, usage and expenditures in line with the usual arrangements for annual and multi-annual maintenance plans. This information should be collated at the management body in charge of the tertiary roads. This complements efforts for accountability especially when plans are being made to introduce more funding resources into this sector.

5.42 There should be support for improving the quality control capacity on works performed to ensure that long-term benefits are fully obtained from maintenance expenditures. While it is not feasible to set up laboratory facilities in every municipality, regional laboratories may become necessary especially where high quantities of maintenance, rehabilitation and reconstruction works are anticipated. It will also be equally relevant to build technical capacity in quality control works. Options for simple equipment and tests should also be explored to aid quality control where laboratory testing is unavailable or not cost-effective. A determination should also be made as to who is best suited to carry out quality control under the chosen management model (i.e. whether this role stays in-house or is contracted out to consultants).

The proposed National Action Plans

5.43 The proposed strategy for improving the management and financing of the secondary and tertiary roads in the SEE countries is provided below for each of the countries. The following tables lay out the broad strategy and actions proposed for each of the SEE countries in the short to medium term.
### Table 8: Possible short-to-medium term actions – Albania

<table>
<thead>
<tr>
<th>Country</th>
<th>Short Term:</th>
</tr>
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</table>
| Albania | • Undertake an inventory of the ‘active’ tertiary road network;  
• Identify the ‘lifeline’ local road network;  
• Revise the functional classification the road network to reflect the above;  
• Clarify the ownership and responsibility for secondary and local roads, passing responsibility for former back to GRD;  
• Formally adopt the reform plan for GRD;  
• Create an integrated road database and asset management system for all roads, including the production of cadastral maps of road network;  
• Introduce necessary data collection processes to maintain the asset management system, collecting condition, traffic etc.;  
• Draft a rural development/transport strategy; |

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<th>Medium Term:</th>
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| Albania | • Continue the reform of GRD - including institutional strengthening as part of reform process at every level of management including specialized training programs to ensure right skills and personnel for planning, prioritizing, procurement, financial capability and accountability;  
• Implement the rural development/transport strategy – including ensuring levels and scope of finance, sufficient for local government units to maintain their assets;  
• Implement annual and multi-annual maintenance planning based on the output of the AMS to validate LGU decisions;  
• Identify and operationally establish quality control initiatives;  
• Seek to improve the efficiency of spending in the sector – by piloting Output and Performance based Road maintenance Contracts (OPRCs) on a regional basis; and  
• Complete the strengthening of the design standards for all classes of roads. |
<table>
<thead>
<tr>
<th>Country</th>
<th><strong>Short Term:</strong></th>
<th><strong>Medium Term:</strong></th>
</tr>
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<tbody>
<tr>
<td>Bosnia and Herzegovina</td>
<td>• Undertake an inventory of the ‘active’ tertiary road network;</td>
<td>• Continue the reform of the Public Road Directorates - including institutional strengthening as part of reform process at every level of management including specialized training programs to ensure right skills and personnel for planning, prioritizing, procurement, financial capability and accountability;</td>
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<td></td>
<td>• Identify the ‘lifeline’ local road network;</td>
<td>• Implement the rural development/transport strategy – including ensuring levels and scope of finance, sufficient for local government units to maintain their assets;</td>
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<tr>
<td></td>
<td>• Revise the functional classification the road network to reflect the above;</td>
<td>• Implement annual and multi-annual maintenance planning based on the output of the AMS to validate LGU decisions;</td>
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<td></td>
<td>• Clarify the ownership and responsibility for secondary and local roads in the Federation, passing</td>
<td>• Identify and operationally establish quality control initiatives; and</td>
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<tr>
<td></td>
<td>responsibility for former back to the Federation Road Directorate;</td>
<td>• Seek to improve the efficiency of spending in the sector – by piloting Output and Performance based Road maintenance Contracts (OPRCs) on a regional basis.</td>
</tr>
<tr>
<td></td>
<td>• Update the established road database and asset management system for all roads, including the</td>
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</tr>
<tr>
<td></td>
<td>production of cadastral maps of road network;</td>
<td></td>
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<tr>
<td></td>
<td>• Establish the necessary data collection processes to maintain the asset management system,</td>
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<td></td>
<td>collecting condition, traffic etc.;</td>
<td></td>
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<tr>
<td></td>
<td>• Draft a rural development/transport strategy;</td>
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### Table 10: Possible short –to-medium term actions – Kosovo

<table>
<thead>
<tr>
<th>Country</th>
<th>Short Term:</th>
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<tbody>
<tr>
<td>Kosovo</td>
<td>• Undertake an inventory of the ‘active’ tertiary road network;</td>
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<tr>
<td></td>
<td>• Identify the ‘lifeline’ local road network;</td>
</tr>
<tr>
<td></td>
<td>• Revise the functional classification the road network to reflect the above;</td>
</tr>
<tr>
<td></td>
<td>• Clarify the ownership and responsibility for secondary and local roads;</td>
</tr>
<tr>
<td></td>
<td>• Update the current road database and asset management system for all roads,</td>
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<tr>
<td></td>
<td>including the production of cadastral maps of road network;</td>
</tr>
<tr>
<td></td>
<td>• Introduce necessary data collection processes to maintain the asset management system, collecting condition, traffic etc.;</td>
</tr>
<tr>
<td></td>
<td>• Draft a rural development/transport strategy;</td>
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</tbody>
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<table>
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<tr>
<th>Medium Term:</th>
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<tbody>
<tr>
<td>• Continue the reform of the institutions of the sector - including institutional strengthening as part of reform process at every level of management including specialized training programs to ensure right skills and personnel for planning, prioritizing, procurement, financial capability and accountability;</td>
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<tr>
<td>• Implement the rural development/transport strategy – including ensuring levels and scope of finance, sufficient for local government units to maintain their assets;</td>
</tr>
<tr>
<td>• Implement annual and multi-annual maintenance planning based on the output of the AMS to validate LGU decisions;</td>
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<tr>
<td>• Identify and operationally establish quality control initiatives;</td>
</tr>
<tr>
<td>• Seek to improve the efficiency of spending in the sector – by piloting Output and Performance based Road maintenance Contracts (OPRCs) on a regional basis; and</td>
</tr>
<tr>
<td>• Complete the strengthening of the design standards for all classes of roads.</td>
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</table>
Table 11: Possible short-to-medium term actions – FYR Macedonia

<table>
<thead>
<tr>
<th>Country</th>
<th>Short Term:</th>
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<tbody>
<tr>
<td>FYR Macedonia</td>
<td>• Undertake an inventory of the ‘active’ tertiary road network;</td>
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<td></td>
<td>• Identify the ‘lifeline’ local road network;</td>
</tr>
<tr>
<td></td>
<td>• Revise the functional classification the road network to reflect the above;</td>
</tr>
<tr>
<td></td>
<td>• Clarify the roles of ownership, management and responsibility for primary,</td>
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<tr>
<td></td>
<td>secondary and local roads;</td>
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<tr>
<td></td>
<td>• Update the current road database and asset management system for all roads,</td>
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<tr>
<td></td>
<td>including the production of cadastral maps of road network;</td>
</tr>
<tr>
<td></td>
<td>• Introduce necessary data collection processes to maintain the asset</td>
</tr>
<tr>
<td></td>
<td>management system, collecting condition, traffic etc.;</td>
</tr>
<tr>
<td></td>
<td>• Draft a rural development/transport strategy;</td>
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<td></td>
<td>Medium Term:</td>
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<td>• Continue the reform of the institutions of the sector - including</td>
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<td>institutional strengthening as part of reform process at every level of</td>
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<td>management including specialized training programs to ensure right</td>
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<td>skills and personnel for planning, prioritizing, procurement, financial</td>
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<td>capability and accountability;</td>
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<td>• Implement the rural development/transport strategy – including ensuring</td>
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<td>levels and scope of finance, sufficient for local government units to</td>
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<td>maintain their assets;</td>
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<td>• Implement annual and multi-annual maintenance planning based on the</td>
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<td>output of the AMS to validate LGU decisions;</td>
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<td>• Identify and operationally establish quality control initiatives;</td>
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<td>• Seek to improve the efficiency of spending in the sector – by piloting</td>
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<td>Output and Performance based Road maintenance Contracts (OPRCs) on a</td>
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<td>regional basis;</td>
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<td>• Update the design standards for all classes of roads.</td>
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### Table 12: Possible short –to-medium term actions – Montenegro

<table>
<thead>
<tr>
<th>Country</th>
<th>Short Term:</th>
<th>Medium Term:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montenegro</td>
<td>- Undertake an inventory of the ‘active’ tertiary road network;</td>
<td>- Continue the reform of the institutions of the sector - including institutional strengthening as part of reform process at every level of management including specialized training programs to ensure right skills and personnel for planning, prioritizing, procurement, financial capability and accountability;</td>
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<td></td>
<td>- Identify the ‘lifeline’ local road network;</td>
<td>- Implement the rural development/transport strategy – including ensuring levels and scope of finance, sufficient for local government units to maintain their assets;</td>
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<tr>
<td></td>
<td>- Revise the functional classification the road network to reflect the above;</td>
<td>- Implement annual and multi-annual maintenance planning based on the output of the AMS to validate LGU decisions;</td>
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<tr>
<td></td>
<td>- Clarify the roles of ownership, management and responsibility for primary, secondary and local roads;</td>
<td>- Identify and operationally establish quality control initiatives;</td>
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<td></td>
<td>- Introduce a road database and asset management system for all roads, including the production of cadastral maps of road network;</td>
<td>- Seek to improve the efficiency of spending in the sector – by piloting Output and Performance based Road maintenance Contracts (OPRCs) on a regional basis; and</td>
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<tr>
<td></td>
<td>- Introduce necessary data collection processes to maintain the asset management system, collecting condition, traffic etc.;</td>
<td>- Update the design standards for all classes of roads.</td>
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</table>
### Table 13: Possible short –to-medium term actions – Serbia

<table>
<thead>
<tr>
<th>Country</th>
<th>Short Term:</th>
<th>Medium Term:</th>
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<tbody>
<tr>
<td>Serbia</td>
<td>• Continue the inventory of the ‘active’ road primary and secondary road network;</td>
<td>• Continue the reform of the institutions of the sector - including institutional strengthening as part of reform process at every level of management including specialized training programs to ensure right skills and personnel for planning, prioritizing, procurement, financial capability and accountability;</td>
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<tr>
<td></td>
<td>• Undertake an inventory of the ‘active’ local road network;</td>
<td>• Implement the rural development/transport strategy – including ensuring levels and scope of finance, sufficient for local government units to maintain their assets;</td>
</tr>
<tr>
<td></td>
<td>• Identify the ‘lifeline’ local road network;</td>
<td>• Implement annual and multi-annual maintenance planning based on the output of the AMS to validate LGU decisions;</td>
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<tr>
<td></td>
<td>• Revise the functional classification the road network to reflect the above;</td>
<td>• Identify and operationally establish quality control initiatives;</td>
</tr>
<tr>
<td></td>
<td>• Clarify the roles of ownership, management and responsibility for primary, secondary and local roads;</td>
<td>• Seek to improve the efficiency of spending in the sector – by extending the successful Output and Performance based Road maintenance Contracts (OPRCs) from Macva and Kolubara to the other 25 regions of Serbia; and</td>
</tr>
<tr>
<td></td>
<td>• Support the operational establishment of a road database and asset management system for all roads, including the production of cadastral maps of road network;</td>
<td>• Update and harmonize the design standards for all classes of roads.</td>
</tr>
<tr>
<td></td>
<td>• Introduce necessary data collection processes to maintain the asset management system, collecting condition, traffic etc.;</td>
<td></td>
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<tr>
<td></td>
<td>• Draft a rural development/transport strategy;</td>
<td></td>
</tr>
</tbody>
</table>

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REFERENCES


ECORYS Nederland BV, 2007. “Strengthening the financial sustainability of the roads sector in UNMIK/Kosovo” Rotterdam.


Ruan, G. 1999. “A new institutional framework for the management and finance of municipal rural roads: a case study from Guatamela” Rural Travel and Transport Program.


ANNEX A - FUNCTIONAL CLASSIFICATION OF ROADS

Functional Classification of Roads: Basic Concepts

Countries manage their road systems by administrative and functional classifications. The former assigns road ownership, the latter presides over technical requirements and maintenance practices, and influences the administrative classification and financing. In many countries these two classifications are gradually approaching each other, although they never can fully coincide. Functional classification is an indispensable tool for rational assessment and assignment of responsibilities in the road sector. For numerous reasons, including transferability of benchmarks and comparison of performance indicators, it would be beneficial if it used common criteria. This Annex reviews the key ideas in functional classification.

Basic concept

For administration countries have organized their roads into hierarchical networks according to their main purposes, i.e. national roads for roads linking the capital to provincial centers, principal cities and other centers of national importance; urban roads for roads and streets serving transport demands within cities and towns; and, rural roads for local transport demands in rural areas. Already the Romans knew that this was not enough and classified roads also functionally, which has evolved into a modern practice. Functional classification is the process by which the roads are grouped into classes by the service they are intended to provide. Basic to this process is the recognition that a trip involves movement through a network of roads. Functionally classified road network assigns each road link a role that channels trips through a network efficiently. The basic concepts of functional classification are applicable regardless of the nature or level of development of the economy or mix of traffic.

The basic idea in functional classification is schematically illustrated in the figure. In the upper left part, lines of travel desire connect trip origins and destinations. Line...
widths indicate amounts of travel. Sizes of circles indicate the trip generating power of settlements. Since direct-line connections for every desire line cannot be provided, trips are channeled to a road network. This is shown in the lower left part of the figure. Note that the heavy travel movements are served directly, and that low volumes are channeled into indirect paths. The roads shown are labeled *local, collector, and arterial* -- terms that describe the functions of each *functional* class.

The same concepts apply also in urban areas. However, because of the high intensity of land use and travel throughout an urban area, specific travel generation centers are more difficult to identify. Additional considerations, such as spacing between collectors and arterials, become more important in classifying the urban road network functionally.

**Access and mobility**

Allied to the idea of channeling traffic is the dual role the road network plays in providing *access* to property and in travel *mobility*. Access is a fixed requirement, necessary at both ends of any trip. Mobility along the path of such trips is defined in terms of "level of service." It can incorporate a wide range of indicators: road condition, travel speed, degree of congestion, and so forth.

The concept of channeling traffic leads not only to a functional hierarchy, but also to a hierarchy of trip distances. As illustrated in the figure, tertiary roads emphasize the land access function and arterials emphasize the mobility function; collectors offer a compromise between both functions. Consequently, arterials should have the highest traffic volumes, the greatest amount of commercial traffic, and the longest average trip lengths. Collectors should have intermediate values for these factors, and locals the lowest values. Also, the longest trips should have the highest percentage of their trips on arterials, and the shortest trips should be concentrated on locals.

**Purposes of Functional Classification.**

The most important purposes and applications of functional classification include:

- Delineation of public responsibilities in the provision and standard of public roads.
- Assignment of a road’s ownership and responsibility for its management and financing.
- System planning for the road using travel modes, including non-motorized traffic; access management (access control); and, coordination with other modes of transport.
- Assistance to road users for selecting a travel route from origin to destination.
- Assignment of (uniform) minimum standards, including permissible vehicle axle loads, weights and dimensions.
- Determination of the size of the public road network and its quality commensurate with what the country can afford at the time.

**On Classification Procedure and Process.**

It is important for any classification or re-classification study to invite, with an introduction to the subject, the participation of all stakeholders in the exercise to
express their interests and concerns. Concurrent technical work should consider the population and the location of centers for administration, social and economic activities such as education and health, commerce and trade, manufacturing, private and public services, and important transport junctions such as ports, rail stations and border crossings. Following a description of the various centers they may then be divided into groups by their importance at national, regional, provincial, and district level.

The adoption of minimum standards for each class of roads will have financial implications. It is important that the standards adopted are linked to current road standards and what the country can afford at the time. The advantages of this include standardization of services across regions, and an implicit requirement that requests for upgrading will have to be justified by savings in travel and transport costs. Road classification exercise needs to be carried out with a view to the governments’ financial capacity and users’ willingness to pay for roads. A road network which is too large or has too high technical standards will deteriorate. For roads which are only of limited public interest, the government or local authority may only offer a contribution towards their maintenance provided the users maintain them at their expense (normally at lower standard and also allow limited public travel).  

Functional classification is a permanent but evolving representation of the road network. Demand for road access changes with economic growth and increasing prosperity, with relocation of population, economic activities and trade routes, and with expansion of urban areas and concerns for the environment. The functional classification must thus be updated periodically to take account of changes in transport demands and the road network to fulfill its role as a management tool.

Use of More Detailed Functional Class Breakdowns

For several reasons, a state or country may wish to create more than the three functional classes. One reason may be that there are more than three levels of road owners with road system responsibilities. Another reason for creating additional classes is to distinguish that portion of the road system for which the highest design standards (e.g., motorways) are warranted from other arterials that are under the jurisdiction of state or national governments, but which do not warrant the highest design standards. Additional breakdowns for arterials and collectors may be desirable. Finally, specialized functional classes may be desirable in some states or countries because of unique functions served. Examples include parkways, truck routes, busways and high occupancy vehicle routes, private (access) roads and routes for non-motorized vehicles.

The following list offers this more extensive classification system. The names are descriptive and countries often have their own names for classes. Again it would be

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60 An important and difficult aspect of the classification exercise is to establish how far the government can afford to go in assuming responsibility for basic access, in particular in rural areas. A large part of the road network in Finland and Sweden is owned and maintained by private cooperatives with some financial assistance from the government and local authorities. Equally important are the minimum technical standards. In rural areas, are all-weather 2-lane earth roads affordable and acceptable; or are one-lane roads more appropriate? The financial trade off between network extension and minimum standard is an issue to be considered carefully.
useful if the criteria for classifying roads and paths functionally were the same regardless what the naming system a country has.

Arterials: Motorways and other divided arterials;
Principal arterials;
Minor arterials
Collectors: Major collectors;
Minor collectors
Locals: Public local roads;
Private local roads;
Other: Bicycle and pedestrian paths.
ANNEX B – LINKS BETWEEN ECONOMIC DEVELOPMENT AND ROAD INFRASTRUCTURE

Introduction

2.2 **The importance of the secondary and tertiary roads sector in the SEE countries can be summarized under the following seven (7) broad themes.** Whilst, there is some cross-cutting, as some contribute to elements in others, the following themes have been identified: (i) the contribution to the agricultural sector, particularly reflecting the importance of the sector to the SEE economies; (ii) the contribution to economic development; (iii) the contribution to poverty alleviation through the generation of higher incomes (both farm and non-farm based) and improvements in living standards; (iv) the contribution to regional integration by ensuring equal access opportunities throughout the country irrespective of terrain, affluence or ethno-political affiliations; (v) the contribution to tourism which is an emerging sector in many of these countries; (vi) the contribution to alleviating rural-urban migration; and (vii) the contribution to improved access to essential services like education, health, administrative functions and family/leisure visit opportunities. A summary of the evidence is presented in more detail in the following sections.

The contribution to the agricultural sector

2.3 **The agriculture sector represents a significant part of the economies of the SEE countries.** The contribution of the sector to GDP ranges from eleven (11) percent of GDP in Montenegro up to thirty (30) percent of GDP in Kosovo (See Figure 2). The agricultural sector is mainly reliant on efforts of farmers in rural areas, who presently face very poor quality infrastructure. Demographic data shows the majority of the population in the Western Balkan countries lives in rural areas with up to sixty-five (65) percent in Kosovo.

2.4 **An inefficient rural transport system constrains agricultural productivity in a number of ways.** Firstly, the high transport and transaction costs hamper the ability of the rural farmers to articulate with markets and forces them to settle on subsistence agriculture. In Albania, only twenty (20) percent of farmers sell some of their produce in the local market and only nine (9) percent of what they produce is sold. Farmers in communities with poor road access end up selling to visiting merchants at very low prices, watching helplessly as their produce ends up getting spoiled, or choosing to produce only what they need. Secondly, proximity to markets influences the effective prices of both agricultural inputs and outputs. The benefits of an improved road

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61 2004 OSCE estimates; the only country where rural population is not a majority is FYR Macedonia (31% UN 2005 statistics)

network to the agricultural sector are manifested through better farm-gate prices to farmers (particularly for perishable produce), and better competitiveness. Purchase of inputs like seeds, fertilizers, pesticides and sale of outputs like the farm produce decline with increasing distance from markets. Other benefits accrue through the ready availability of fertilizers and easy access to seeds and pesticides. Much wider benefits to the agricultural sector are generated with changes in crop portfolio and the usage of better inputs and technologies.

2.5 Recent studies in the SEE countries have re-affirmed the importance of investing in rural infrastructure as a critical intervention towards overcoming constraints to agricultural competitiveness. The recent work reports that underdeveloped infrastructure, including roads, inhibits the development of integrated supply chains, and together with the fragmentation of agricultural production (the very large number of small farms), and difficulties in product collection and marketing, increase the costs of agricultural produce. Increased investments in tertiary roads are noted as having created tangible improvements for producers in nearby areas. In addition, in recent poverty assessments in the region, the micro-economic constraints to agricultural growth are attributed in part to the low investments in infrastructure with farmers living in the mountainous areas affected the most.

2.6 The recent studies also report the potential synergy of benefits in different types of rural infrastructure. The studies also note the potential contribution to improved performance in the agricultural sector was most strongly supported by investments in rural infrastructure (mainly irrigation and roads). It is advised in these studies that governments should seriously consider increasing spending in rural infrastructure (especially irrigation and roads) since this type of spending not only yields high returns to agricultural production, but also has a large impact on poverty reduction since most of the poor still reside in rural areas and their main source of livelihood is agriculture.

The contribution to economic development

2.7 There is considerable quantitative evidence of the economic benefits of improving secondary and tertiary roads. A number of studies have quantified the time savings, transport cost reductions and transaction cost reductions gained by rural households in improved access to product and factor markets, as well as the impact on generating rural job opportunities. Some studies have even shown that road access might even compensate the absence of other public and private assets. The effects of good rural infrastructure go beyond furthering only farm-based incomes: A key study has shown that lower level of infrastructures and community-level activities are associated with lower participation in non-farm wage employment and self-employment. It is further recognized that access to roads and markets is particularly

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63 See for example World Bank (2006b); World Bank (2007a).
64 World Bank (2007b).
important for women’s participation in non-farm self-employment with assets\textsuperscript{68}. The following paragraphs provide more detailed information in each area.

2.8 **Rural roads lead to increased productivity of businesses.** Increased productivity occurs because improving the transportation infrastructure and services contributes to an improved business climate and improved productivity of businesses in general, creating a positive environment for reducing poverty. (See Box 2 for empirical evidence)\textsuperscript{69}.

**Box 2 Increasing the productivity of businesses – Empirical Evidence**

- Percentage of paved roads and road density both correlated with crop yield, with elasticity coefficients of 0.305 and 0.058 respectively. Percentage of paved roads and road density positively correlated with aggregated output with elasticity coefficients of 0.263 and 0.121 respectively;
- From 85 randomly drawn sample districts in India, a rural income survey showed elasticity of bank expansions with respect to road density at 0.80, with a 23% increase in fertiliser demand and increases (13\%-46\%) in pump-sets, tracts, draught animals and milk animals over a 10 year period;
- A study in India using data from the International Crops Research Institute for the Semi-Arid tropics from 1970 through 1974, with 5,450 observations of irrigated and non-irrigated districts, showed that for irrigated districts, road density (km roads/ 1000 sq. km cropped land) was strongly and positively correlated with agricultural output with a coefficient of 0.189; and
- A study of 85 districts in thirteen states in India found that 7% of growth in aggregate output can be attributed to road investments through the increased access to markets by farmers;

2.9 **Improved tertiary road provision leads to increased economic opportunities for the rural poor.** This occurs because the poor who live in areas with inadequate transport find themselves at a significant economic disadvantage. Businesses tend not to locate in areas with poor infrastructure; and businesses that are located there tend to be less productive, employ less and pay lower wages. These problems are heightened for agricultural and other rural producers whose livelihoods are dependent on their ability to get their produce to markets. (See Box 3 for empirical evidence).

**Box 3 Increased economic opportunities specifically targeted to the poor – Empirical Evidence**

- Research in Asia showed villages with better access to roads having 14\% lower costs of fertilisers, 12\% higher wages and 32\% higher crop output;
- In Zhengang district in Bhutan, a survey found that families within 0 to 0.5 days walking time of a road earned over two times more than families within 1 to 3 days walking time of a road;
- In Bangladesh, a survey found that in a matched sample of sixteen villages with comparable soil and agronomic conditions, topography and water regimes, agricultural incomes in villages with better road access were around 24\% higher, agricultural wages were about 12\% higher, total wage income was almost doubled; with a larger increment (78\%) in incomes from livestock and fisheries;
- In Madagascar, construction of a road to a previously isolated village (only accessible by air and foot) led to a 35\% increase in household disposable income; with 52\% of this going to the poorest 10\% of the population. Farmers living within 5 km of the road benefited 50\% more than other more remotely located farmers;
- In the Philippines, a study of 586 out of 4,684 households affected by the construction of 6 rural roads showed a household income increase of 28\% (40\% for farmers, 20\% for non-farmers). Production volumes of seven major marketable crops increased by almost 40\% in 2 years since project completion; Average farm-gate prices rose 59\%, market prices rose 29\% one year after project completion. More importantly, before the project, 69\% of the products were sold at the farm yielding lower prices for farmers but after the project, 60\% of the products were sold at the markets where they were sold at higher prices; and

\textsuperscript{68} Dabalen, Paternostro and Pierre (2004).

\textsuperscript{69} Unless otherwise stated, all empirical evidence from Box 1 to Box 10 is sourced from Brenneman and Kerf (World Bank, 2002).
• An impact evaluation study conducted with 2,038 households after a rural roads project was implemented in Peru found that 26.5% of focus groups impacted by the road access component of the project felt that they had higher incomes compared to just 16.3% of control groups.

2.10 **Improved tertiary road provision results in lower transport costs.** Lowering transportation costs is critical because they are usually disproportionately high for the poor. Rural transport is usually expensive and inefficient due to the long distances, poor condition of the road infrastructure and the low levels of demand. The poor condition also contributes to increased “wear and tear” of vehicles hence higher vehicle operating costs. Improving roads can lower the costs of transportation; and for the rural poor this can have significant positive consequences. (See Box 4 for empirical evidence).

**Box 4 Lower transportation costs – Empirical Evidence**
- In Morocco, after implementation of a World Bank rural roads improvement project, the percentage of bigger lower cost trucks increased by 500% and led to a 50% reduction in transportation costs;
- In Ghana, after a rural roads rehabilitation project, costs for transporting maize on the improved roads was 33% less on improved roads compared to unimproved roads; a shared taxi ride was 20% cheaper on improved roads compared to unimproved roads; and an emergency taxi cost 33% to 40% cheaper on improved roads compared to unimproved roads; and
- An evaluation impact survey conducted after the first rural roads project in Peru showed that on average, car fares on control roads rose 33.5% compared to 13.9% for project roads; minibus fares rose 33.6% on control roads compared to 12.8% for project roads; bus fares rose 19.5% on control roads compared to 12.9% on project roads and truck fares rose 23% on control roads compared to 9% on project roads.

2.11 **Economic benefits also result from access to cheaper / better goods and services.** This is because building/maintaining infrastructure that reduces the time it takes to transport the goods and services can significantly lower the costs of these goods and services for the poor; and presents them with a wider and more competitive range of the same. (See Box 5 for empirical evidence).

**Box 5 Increasing access to cheaper/better goods and services – Empirical Evidence**
- A 1985 study in Morocco and its follow-up in 1995 after a rural roads project rehabilitated old roads and built new roads showed that the cost of butane fuel dropped from Dh20 to Dh11 in Chefahouen, with similar decreases reported in other affected zones.

2.12 **Improved tertiary roads can also improve fiscal performance.** Without transport infrastructure, businesses and hence business tax bases cannot expand. In the short run, such infrastructure investments may have a negative impact on a government’s fiscal position because of the high initial costs of infrastructure and the need to budget for recurrent cost of maintenance. However, transport improvements can be effected in the short term to cover recurrent costs and expanded to meet increasing demand in the long run with a result of increased fiscal returns through a wider tax base and thus giving more financial resources for government to spend on education, health and programs to benefit the poor. (See Box 6 for empirical evidence).

**Box 6 Improving fiscal balance – Empirical Evidence**
- In Morocco, the 1985, and follow-up 1995, study following a rural roads rehabilitation and new roads project showed that tax revenues in the project zone increased by 567% from Dh 1,500 to Dh 10,000 in the ten year period.
The contribution to regional integration

2.13 The contribution to regional integration within each country is of strategic importance. Within the countries themselves, disparities exist with some regions lagging behind others in terms of resources and development. Poor rural accessibility resulting in increased social and economic isolation a major contributor to both the perpetuation of rural poverty and rural-urban migration. Isolation means that people are unable to take advantage of employment opportunities available within a wider geographical extent without forced seasonal or permanent migration away from their households. Similarly, they can not take advantage of economic opportunities through interactions with other villages, towns or centers. Improving road infrastructure provides a significant contribution to improving access to remote areas and removing the actual and perceived isolation confronting these communities.

The contribution to tourism

2.14 Tourism is taking on an increasingly important role in the SEE countries70. Some countries are benefiting directly from significant tourist development at seaside towns as is the case in Albania and Montenegro. In addition, the SEE countries have numerous historical sites of cultural and religious significance within their boundaries, as well as areas of natural beauty that would benefit from improvements in access.

The contribution to alleviating rural-urban migration

2.15 Since transition, there has been increasing rural-urban migration in many of the SEE countries. Depopulation of villages, especially in the mountainous areas has left many previously productive areas abandoned, with corresponding implications for the sector, the region, and the economy as a whole. Many former producers become consumers without being engaged in any new productive sectors or industry. At the same time, the recipient urban areas have faced increased pressure on services like transport, housing and employment. There is increased likelihood of the emergence of unplanned and illegal constructions or activities by the unemployed or underemployed in their bid for survival in these new environments. The provision of rural transport infrastructure is an important precursor in arresting these negative developments.

The contribution to improved access to services

2.16 Improved tertiary road provision results in greater access to basic services especially health and education. Poor road access in villages or the high cost of transport is a contributory factor to the failure of children to go to school or failure to access good health care facilities leading to possible increased mortality rates. One study compared areas in Malaysia with varied degrees of accessibility and verified the positive impacts of rehabilitated infrastructure in maternal healthcare, nutrition and access to schools.71 Another study focuses on the impacts of road access over rural poor in Sub-Saharan Africa and shows the significant negative impacts of road deterioration on accessing health services.72

2.17 Improving tertiary roads also improves the quality of education. Inadequate transport contributes to higher costs and lowers the effectiveness of support for school services. Poor road links reduce the opportunity to consolidate facilities, improve

70 The industry is relatively under-developed but tourist numbers have steadily been on the increase since 2000 (Eurostat, 2006)
71 Windle and Cramb (1996).
72 Porter (2002).
Improving the Management of Secondary and Tertiary Roads in the SEE Countries

quality, and reduce administrative costs. It can also have a negative impact on the quality of teachers, as the cost and difficulties in accessing remote schools means that only the newly graduated or poorly qualified will take employment in rural areas. Ensuring an adequate transport system for both children and teachers can make a significant contribution to improving the quality of education. (See Box 7 for empirical evidence).

Box 7 Improving education and the delivery of education – Empirical Evidence

- In Andhra Pradesh, India, the female literacy rate is 60% higher in villages with all season road access compared with villages with sporadic access;
- In Morocco, a study in 1985 before rural roads improvements and 10 years later after the improvements showed school enrolment rise from 28% to 68% and female enrolment more than tripled;
- In Bhutan, based on villages without access to a road to villages with access to a road, it is estimated that providing access to a road in a village translates to an increase in school attendance of between 75 to 100 people;
- In the Morocco study (1985, follow-up 1995) after the rural roads rehabilitation project, the number of schools increased from 3 to 13 for the project zones while the number increased from 2 to 3 for the control zones;
- In a rural roads project in Peru, an evaluation impact survey found that of 2,038 households impacted by a roads access project, 69% believed it had improved teachers’ willingness to teach, 63% believed it had a positive impact on teacher recruiting and 79% believed that it had improved female teachers’ safety when travelling; and
- Evidence from Pakistan showed an all-weather road may increase girls’ primary school enrolment by 50 percent (Dali Essakali, 2005).

2.18 Improving roads also raises the quality of health care. When distances are long and transport costs are high, access to adequate health care is problematic. Reducing the time and cost to reach health centers through improving tertiary roads can realize significant improvements in health care for the disadvantaged. In addition, facility consolidation and service quality can also be realized by improved transport links. (See Box 8 for empirical evidence).

Box 8 Increasing access to health services and the delivery of health care

- A 1973 survey in Lusaka, Zambia showed that 50% of patients attended hospitals if they were within 5 km of their homes. However only 2% of patients attended hospitals if they were within between 30 km and 44 km from their homes;
- In Jamaica, 73.1% of women noted mobility as being a major problem in accessing pre-natal care services;
- A study in the Philippines showed that a 10% increase in distance (by time) from a health care centre is associated with a 2% increase in mortality rates; and
- In Morocco, the 1985 and follow-up 1995 study following a rural roads rehabilitation and new roads project showed that the number of full time medical staff in affected health centres increased from 0 to 3 or 4 per health centre.

2.19 The poor often live far from sources of potable water so transportation is a significant factor for them in water collection. Inadequate transport makes water collection time consuming and burdensome. For most of the poor, this results in less water consumption; usually of lower quality and can lead to increased incidence of water-borne diseases and higher child mortality. Improving access to clean water can improve health; and also help to reduce the time and energy burdens on the poor. (See Box 9 for empirical evidence).

Box 9 Increasing access to clean water – Empirical Evidence
• A study of 769 households in Zambia, Ghana and Tanzania showed that when trips to collect water were only 5 to 15 minutes, 10.4 litres of water per day were consumed by each family member. When the trip was 22 minutes, consumption fell to 10 litres per day and 33 minutes travel time was linked to only 7.9 litres per day

2.20 Although improving transport does not guarantee increased gender equality, it can increase female mobility and reduce the time expenditure to undertake necessary tasks. This is more pronounced especially in rural areas where women suffer a significant transport mobility disadvantage. (See Box 10 for empirical evidence).

**Box 10 Empowering women – Empirical Evidence**
- The Morocco study (1985, follow-up 1995) showed the average number of women working outside of a farm in a project zone increased from 0.15 to 3;
- Women located in a village on a main road in Cameroon spent more time producing food to sell and made an average income of $570, more than twice the $225 earned by women in an isolated village;
- Evidence from Pakistan showed an all-weather motorable road may increase female literacy by 75 percent (Dalil Essakali, 2005); and
- After project completion of a rural roads program in Peru, 77% of surveyed women reported that the rehabilitated roads and tracks enabled them to travel further, 67% reported that they enabled them to travel more safely, 43% reported that they enabled them to obtain additional income. (Making rural roads work, World Bank, 2005).

2.21 Savings in time and effort are important issues for the rural poor since mobility and access are major factors in their everyday lives. In rural areas, the poor spend large portions of the day traveling to collect firewood, water, fuel and traveling to markets. Improving transport can save significant time and effort for users and can allow for the saved time to be used on other productive purposes like farming. (See Box 11 for the empirical evidence).

**Box 11 Savings in time and effort – Empirical Evidence**
- After a rural roads project carried out in the 12 areas of Peru ranking highest in poverty rates, the post-project data over a representative sample of road and tracks improved by the project showed that on average, travel times reduced by 50%.

2.22 A number of studies relating positive impacts of rural infrastructure provision have also controlled for other contributing variables. For example, it was established in Bangladesh that villages with better road access have greater agricultural output, greater total incomes and better indicators of access to health services, most particularly for women. Evidence was also found that suggested that roads would have increased wage income opportunities, especially for those who have no farmland. Other pioneering work in this direction demonstrated that road infrastructure improvements fostered agricultural output growth, higher usage of fertilisers and a larger credit supply. One author who also used controls and found that impacts from rural road rehabilitation were much more important than the expected reduction in transport cost, showed significant improvements in agricultural outputs as well as important changes in crop portfolio and usage of inputs and technologies. In addition, the study identified very clear causal linkages between rehabilitated road infrastructure

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74 Binswanger et al. (1993).
and access to education, particularly for girls; as well as substantial increase in the use of public health services\textsuperscript{75}.  

\textsuperscript{75} Levy (1996).
## ANNEX C – COUNTRY STRATEGIES FOR THE SECTOR

### Government Policies and Plans affecting the secondary and tertiary roads sector

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy/Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>- Albania Transport Sector Strategy (Draft)</td>
</tr>
<tr>
<td></td>
<td>- Albania National Transport Plan (ANTP)</td>
</tr>
<tr>
<td></td>
<td>- National Strategy for Social and Economic Development (NSSED)</td>
</tr>
<tr>
<td></td>
<td>- Plans for a Tertiary Roads project</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>- Transport Master Plan for Bosnia and Herzegovina (2001)</td>
</tr>
<tr>
<td></td>
<td>- Spatial Plan for the Republic of Srpska for the period upto 2015</td>
</tr>
<tr>
<td>UNMIK/Kosovo</td>
<td>- Transport Policy Plan for Kosovo</td>
</tr>
<tr>
<td></td>
<td>- Kosovo Government Programme</td>
</tr>
<tr>
<td></td>
<td>- Strategic Development Plan of Kosovo</td>
</tr>
<tr>
<td></td>
<td>- Kosovo Spatial Plan</td>
</tr>
<tr>
<td></td>
<td>- Agriculture and Rural Development Plan</td>
</tr>
<tr>
<td></td>
<td>- Plans for a Tertiary Roads Project</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>- Draft National Transport Strategy</td>
</tr>
<tr>
<td></td>
<td>- Spatial Plan of the Republic of Macedonia</td>
</tr>
<tr>
<td></td>
<td>- Plans for a new Law on Public Roads</td>
</tr>
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<td></td>
<td>- Plans for a Secondary and Tertiary Roads project</td>
</tr>
<tr>
<td></td>
<td>- Draft Transport Development Strategy</td>
</tr>
<tr>
<td></td>
<td>- Plans for action on rural roads (under Deputy Minister for Transport)</td>
</tr>
<tr>
<td></td>
<td>- Draft Transport Policy and Strategy</td>
</tr>
<tr>
<td></td>
<td>- Plans for a Road Condition Database (Main and Secondary Roads)</td>
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</table>
## ANNEX D - ROAD SECTOR EXPENDITURES IN SEE COUNTRIES 2001-2006

### Road Expenditures in the Western Balkan Countries (million US$)

<table>
<thead>
<tr>
<th>Country</th>
<th>Road Class</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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<td><strong>Albania</strong></td>
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<td>14.2</td>
<td>20.6</td>
<td>22.5</td>
<td>22.8</td>
<td>23.0</td>
<td>n/a</td>
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<tr>
<td></td>
<td>Capital Expenditures</td>
<td>186.6</td>
<td>124.1</td>
<td>112.0</td>
<td>170.8</td>
<td>160.5</td>
<td>n/a</td>
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<tr>
<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>200.8</strong></td>
<td><strong>144.7</strong></td>
<td><strong>134.5</strong></td>
<td><strong>193.6</strong></td>
<td><strong>183.5</strong></td>
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</tr>
<tr>
<td></td>
<td>Of which local roads</td>
<td>13.9</td>
<td>10.4</td>
<td>20.3</td>
<td>38.8</td>
<td>65.5</td>
<td>n/a</td>
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<tr>
<td><strong>Bosnia and Herzegovina</strong></td>
<td>Recurrent Expenditures</td>
<td>27.6</td>
<td>63.2</td>
<td>70.4</td>
<td>70.4</td>
<td>76.2</td>
<td>n/a</td>
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<tr>
<td></td>
<td>Capital Expenditures</td>
<td>21.1</td>
<td>122.0</td>
<td>55.9</td>
<td>82.8</td>
<td>57.3</td>
<td>n/a</td>
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<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>48.7</strong></td>
<td><strong>185.2</strong></td>
<td><strong>126.3</strong></td>
<td><strong>153.2</strong></td>
<td><strong>133.5</strong></td>
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<td>Of which local roads</td>
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<td>18.1</td>
<td>24.0</td>
<td>26.2</td>
<td>25.4</td>
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<td><strong>Kosovo</strong></td>
<td>Recurrent Expenditures</td>
<td>13.4</td>
<td>12.0</td>
<td>22.5</td>
<td>31.6</td>
<td>16.4</td>
<td>12.6</td>
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<td>Capital Expenditures</td>
<td>40.8</td>
<td>24.1</td>
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<td>39.3</td>
<td>24.4</td>
<td>25.3</td>
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<td><strong>Total Expenditures</strong></td>
<td><strong>54.2</strong></td>
<td><strong>36.1</strong></td>
<td><strong>43.0</strong></td>
<td><strong>70.9</strong></td>
<td><strong>40.8</strong></td>
<td><strong>37.9</strong></td>
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<td>Of which local roads</td>
<td>20.1</td>
<td>13.2</td>
<td>16.1</td>
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<td>16.8</td>
<td>29.2</td>
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<tr>
<td><strong>FYR Macedonia</strong></td>
<td>Recurrent Expenditures</td>
<td>23.9</td>
<td>27.2</td>
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<td>36.5</td>
<td>35.3</td>
<td>n/a</td>
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<td>Capital Expenditures</td>
<td>35.9</td>
<td>32.1</td>
<td>36.9</td>
<td>57.9</td>
<td>51.2</td>
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<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>59.8</strong></td>
<td><strong>59.3</strong></td>
<td><strong>73.8</strong></td>
<td><strong>94.4</strong></td>
<td><strong>86.5</strong></td>
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<td>Of which local roads</td>
<td>11.9</td>
<td>17.1</td>
<td>15.6</td>
<td>13.0</td>
<td>12.9</td>
<td>n/a</td>
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<tr>
<td><strong>Montenegro</strong></td>
<td>Recurrent Expenditures</td>
<td>7.0</td>
<td>7.0</td>
<td>8.7</td>
<td>7.0</td>
<td>5.5</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Capital Expenditures</td>
<td>14.0</td>
<td>14.0</td>
<td>24.3</td>
<td>25.6</td>
<td>45.7</td>
<td>n/a</td>
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<tr>
<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>21.0</strong></td>
<td><strong>21.0</strong></td>
<td><strong>33.0</strong></td>
<td><strong>32.6</strong></td>
<td><strong>51.2</strong></td>
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<td>Of which local roads</td>
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<td>1.7</td>
<td>1.3</td>
<td>4.1</td>
<td>2.3</td>
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<tr>
<td><strong>Serbia</strong></td>
<td>Recurrent Expenditures</td>
<td>88.9</td>
<td>166.4</td>
<td>128.2</td>
<td>184.4</td>
<td>275.3</td>
<td>478.8</td>
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<tr>
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<td>Capital Expenditures</td>
<td>66.5</td>
<td>99.7</td>
<td>140.4</td>
<td>184.3</td>
<td>183.3</td>
<td>139.7</td>
</tr>
<tr>
<td></td>
<td><strong>Total Expenditures</strong></td>
<td><strong>155.4</strong></td>
<td><strong>266.1</strong></td>
<td><strong>268.6</strong></td>
<td><strong>368.7</strong></td>
<td><strong>458.6</strong></td>
<td><strong>618.5</strong></td>
</tr>
<tr>
<td></td>
<td>Of which local roads</td>
<td>11.2</td>
<td>21.5</td>
<td>27.3</td>
<td>27.3</td>
<td>27.3</td>
<td>62.0</td>
</tr>
</tbody>
</table>

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76 PEIR (2006)
77 PEIR (2006); Expenditures in cantons and municipalities in FBiH split 50/50 between recurrent and capital.
78 PEIR (2006), ECORYS (2007); Ratkoceri (2007)
79 PEIR (2007), EIU online, Kikino (2007)
80 2001 and 2002 figures assumed from BHR Report, EIB 2000 estimation that routine and rehabilitation/construction would take 5 million Euros and 10 million Euros per year respectively, rest derived from PEIR (2006).
81 Data on capital expenditures for local roads (2003-2005) obtained from the Directorate of Public Works. Other data derived from estimated municipal spending from available data.
82 Data based on World Bank Serbian study (in draft) and consultant figures (Uzelac, 2007); Local roads estimates for 2003-2005 based on routine and periodic maintenance discussions in Uzelac, 2007; 2006 local roads figure assumes half of NIP(2006-2007) budget for local roads spent in 2006.
ANNEX E – A RURAL TRANSPORT STRATEGY

The strategy must be placed in the general context of the country’s rural development and, more specifically, rural service delivery and accessibility. The rural transport strategy must clearly address issues in three main areas:

1. The strategy should state the national objectives for the sub-sector, as reflected in the government’s policy on rural transport, and the contribution of rural transport to economic and social development. It should identify the target population, assess the current rural transport situation, and establish an approach for dealing with rural access problems.

2. The strategy should spell out the key institutional arrangements in the three principal areas of rural accessibility and mobility:

   • **Rural Transport Infrastructure.** RTI’s institutional framework should answer the key questions related to ownership and responsibility, local capacity, and funding. These include the legal setup for local government roads and community roads and paths, organizational arrangements for management, planning processes and criteria for development and maintenance, financing of maintenance and development, and means to ensure local capacity for management and execution of works (design, supervision, technology, and environmental issues).

   • **Rural transport service.** Transport needs include both motorized goods and passenger services for long trips and intermediate means of transport for short distances. The key areas of concern are the role of government in creating an enabling environment for increased production and use of the services (establishing import duties and licenses, taxes, tariff and route regulation, safety measures, and subsidies), the role of the private sector (acting as operators, manufacturers, and credit institutions), and any social and cultural aspects. Other important issues include allocating responsibilities for providing rural transport between the local and central government.

   • **Location of physical facilities** (clinics, markets, and schools). Certain problems of access are best solved through an effective planning system that gives adequate attention to such concerns in planning new facilities and improving the old. Such a system must be based on community consultation and involvement, allow resources to be fungible (for example, through block grants), and address local resource mobilization and cost-sharing issues.

3. The strategy should specify the roles of key stakeholders (the central and local government; communities; road users; farmers’, transport, and other private sector associations; NGOs; and donors) in formulating the policy and strategy, providing infrastructure and rural transport services, and planning the location of physical facilities. It should include a plan to build the capacity of the public and private sector actors to perform these roles effectively.

Source: Calvo, C.M. (World Bank Technical Paper No. 411)
## ANNEX F – MANAGEMENT MODELS FOR TERTIARY ROAD NETWORKS

<table>
<thead>
<tr>
<th>Management Model</th>
<th>Setup and Examples of use worldwide</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Centralized Agency          | Special central government agency to manage the road network. Ghana, Bangladesh, India (many states), Colombia | • Economies of scale  
• Access to technically qualified people  
• Access to central government budget  
• Consistent framework for planning and financing | • HQ decisions remote from users  
• Local communities not sufficiently consulted about priorities  
• Local communities unwilling to accept responsibility for maintenance  
• Little efforts to build local government capacity |
| Project Implementation Agency | Usually set up as a private not-for-profit implementation unit that pays no taxes. The agency typically works for several local governments. Senegal, Mali, Benin, Madagascar | • Avoids cumbersome government procurement procedures  
• Streamlines payment procedures  
• Pays market based wages and therefore attracts well motivated high quality staff  
• With large workload, model justifies hiring of reasonable number of technically qualified staff  
• Has role to play in economies where local consulting industry is relatively underdeveloped | • Agency not subject to competitive bidding for role  
• Arrangement is almost entirely dependent on donor funding  
• Probably hampers development of local consulting industry  
• Inherent inefficiency associated with single-sourcing (but can evolve into a contract management agency open to competitive bidding). |
| Joint-Service-Committees    | Arrangement where several local government agencies cooperate to procure goods and services on behalf of all their members. Jordan, Zambia, Canada, Guatemala, USA, New Zealand, South Africa | • Economies of scale  
• Better planning and management through pooled resources  
• Can let larger and more cost-effective contracts  
• Local governments collectively determine priorities (participation not consultation)  
• Consistent with long term sustainability | • May require changes in statutes  
• Lack of experience may make first attempts tedious  
• Fiscal incentives not always available  
• Requires technical support from central government |
| Private Sector              | This involves contracting out the planning and management of roads for the entire network under the jurisdiction of the local government. Argentina, Australia, New Zealand, United Kingdom, USA, Zambia | • Can increase efficiency and reduce costs  
• Offers great potential for small networks  
• Local governments determine priorities (participation not consultation)  
• Consistent with long term sustainability | • Requires well developed local consultants and local governments  
• Local governments have to learn how to manage consultants to be effective clients  
• Initial technical support may be needed from a focal agency |