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PERFORMANCE-BASED ROAD REHABILITATION AND MAINTENANCE CONTRACTS IN ALBANIA, A REVIEW OF FIFTEEN YEARS OF EXPERIENCE (2008 – 2023)

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Abstract

For decades, persistent, crisis, deficient management policies and lack of funds after 10 years of starting democracy, led to under- funding and deterioration of road assets in the country to the point that, in 2004, Albania ended up with the lowest share of paved roads in good condition among countries in Balkan region. A survey carried out in 2007 confirmed that only 24% of the national paved network was in good condition (IRI<4), with a high 62% of roads in poor condition. For the improvement of this road system, funds were initiated from foreign financial organizations, loans, and government. During 2008-2015 the level of financing for the improvement of the performance of roads at all three levels, national, regional and local, was increased, using contracts based on maintenance performance or preventive basis contract. However, there was a problem related to the administration and financing of roads during maintenance, which causes a small age of roads to remain in good condition, since the performance contract was signed only for one category of road, for national roads, Results of the good performance for this category forced the management to determine the setting of these performances and for other categories of roads, which in these 15 years have had an improvement of the IRI in the range of 3-4, which is also justified by the increase in traffic and concentration in the roads of some main cities as part of road system.

Keywords: Performance-based contract, road, management, maintenance

1 Introduction

Albania has experienced rapid economic growth since 2005, averaging 6 per year. Thus, it emerged from being the poorest country in Europe into the ranks of middle-income countries by 2008. The rapid pace of growth helped the country increase its per capita income from 18 % of average European Union (EU) incomes in 1998 to 30 by 2012, and fueled aspirations to join the EU. Although the global and euro area crises in 2008 brought Albania's growth to a near standstill by 2012, it is estimated that economic growth accelerated to 3.8 in 2017 from 2.2 in 2015 supported by private investment and consumption [6].During the early 2000s, over half of the Albanian population (57 %) lived in rural areas, and over one-third (35 %) of the rural population were estimated to live in poverty. The poverty head count decreased to approximately 15 of the rural population by 2012 [6]. A qualitative survey carried out in 2002 by the World Bank reported that after employment and income, many Albanians considered infrastructure problems to be the main issue to be addressed. Almost 50 % of rural producers stated that a lack of adequate transportation, primarily good roads, was their greatest marketing problem. Poor road access continues to make it difficult for farmers to reach markets, contributing to migration from rural to urban areas, and affecting the delivery of health and education services [6].

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Albania applied for EU membership in 2009 and became an official candidate for accession in June 2014. This process includes strong commitments for the transport sector and led to Albania signing the European Commission's Memorandum of Understanding [1] for the Core Network which created the South East Europe Transport Observatory. This arrangement helps the Western Balkan countries align their national transport laws with those of the EU.

2 Sector and institutional context

Roads and highways are the predominant mode of land transport in Albania and provide essential connectivity for freight and personal mobility. The overall length of Albania's road network is approximately 15,000 kilometers (km); 4,000 km of national roads and 11,000 km of secondary (regional) roads and local roads [2]. Urban roads represent approximately 2,500 km out of the 15,000 km [6]. Ongoing and planned reclassification of some rehabilitated secondary roads to national roads may significantly increase the proportion of national roads in the network [10].The national roads comprise the principal through-routes of the country. They provide direct service for cities and larger towns and the main border crossing points. The secondary (regional) roads link lesser cities and provide links for all the primary centers, communes, and municipalities, both to each other and to the main national network.2 Local roads are the lowest tier in the system and provide communications within the local government units; they provide for internal communications within the local government unit (LGU) or municipality, and feed traffic to the regional road network and (where direct connections exist) to the national road network. The local roads are a mix of paved and gravel roads [10]. During mid-2000s little of the local road network was paved, and approximately 75– 80 of both the secondary and local road networks were reported to be in a poor or very poor condition [6].In 2018, about half of the secondary and local network is still categorized as being in poor or very poor condition.

Albania had supported a series of transformations in the road sector that have enabled important achievements in terms of sector development, including: (i) decentralization of expenditure and financing responsibilities to provincial and local governments, (ii) introduction of private sector financing, (iii) transferring the execution of works to private contractors, and (iv) focusing the capacity of the existing road agencies towards more efficient planning. The restructuring leaves municipalities with substantially increased responsibilities for their road assets. However, there is still much to be done to strengthen the planning, execution, and financing arrangements to effectively manage these assets, particularly given the poor state of some of the local infrastructure. Municipalities vary widely in population, size, topography (flat, hilly or mountainous terrain), and capacity for managing their road network [2, 4].

The project for road maintenance base on performance were initiated in 2008 by the government and World Bank which consisted on 1,333 km of main roads.

The project is composed of 4 components: a) Road Maintenance Works and Monitoring; b) Institutional Reform: c) Transport Sector Reform: d) Project Management and Audits. Improvement works under the four OPRC contracts are defined as works needed to enhance road safety, through the execution of three types of interventions: a) improvement of simple intersections, b) improvement of urban zones and c) improvement if large intersections. The design review and approval for all simple intersections has been completed. There are currently 61 approved projects for simple intersections under the three contracts and their physical implementation is essentially completed. There are no improvement works foreseen under Contracts. There is a delay with respect to the design and design approval for more complex improvement works, mainly for large intersections and for safety improvements in urban zones.

The design proposals for the urban zones and improvement of large intersections is still pending with the contractor. Contract A and B have not yet officially submitted design proposals for Big Intersections or Urban Zones whereas Contract C has submitted design proposals for urban zones, but these were cancelled by ARA- Albanian Road Authority since the "simple" interventions required by the bidding documents were considered inappropriate.
ARA and the MC continue to have to deal with numerous requests for Emergency Works presented by Contractors, mostly to repair damages to the roads during adverse weather and rains, but also to repair damages due to uncontrolled road-side developments. These requests are being reviewed by the Monitoring Consultant (MC) who in most cases recommended their approval. The procedure used by contractors for requesting emergency works are in line with the amended OPRC contracts and the revised specifications. While many Emergency Works have been completed (valued at EUR 6.5 million) the completion of some others is still on- going. So far 58 Emergency Work Orders have been notified and some of these approved and implemented corresponding to an estimated cost approximately EURO 6.2 million. The contractors have completed or substantially completed 45 EWO's whereas 5 are still on-going, according to table 1.
The payment for the completed works covered by the Emergency Work Orders claimed by the contractors and paid is approximately 4.6 million Euro. As a result, payment reductions have been steadily increasing and the pressure on contractors to comply with the required Service Levels has been rising. The total amount of payment reductions applied until now is slightly above EUR 739,000. Training has been provided by the MC for the staff of the MC, ARA and the Contractors on the application of provisions of the Revised Specifications and procedures are now being followed uniformly for all four OPRC contracts.
MoIE- Ministry of Infrastructure and Energy indicated that it seeks to continue work on the "Preparation and Adoption of the Road Construction and Maintenance Standards Manuals". A joint working group between ARA and MoIE is to be set up for the drafting of these standards, taking into consideration the fact that MoIE's successful experience in drafting of technical rules for designing and constructing road infrastructure. ARA is expecting the pending confirmation from MoIE shortly. ARA may request support to this activity from the project.
However, due to internal inefficiencies and because of the sheer size of the needs (the proportion of paved roads with maintenance backlog and in dire need of rehabilitation was high—in the order of 40) the condition of said network remained far from satisfactory and it soon became apparent that neither the routine maintenance nor the traditional capital improvement programs were able to rapidly overcome the important backlog that had accumulated over the years.

Table 1 List of contracts procured Source: ARA year 2022.

Contracts (descriptions)	**Type**	**Contract Amount** [Million of Euros]	**Completion date**
Civil Works			
Rehabilitation contract A	CW	21.749	31.12.2021.
Rehabilitation contract B	CW	19.698	31.12.2021.
Rehabilitation contract C	CW	11.625	31.12.2021.
Rehabilitation contract D	CW	13.786	31.12.2021.

The average value for Albania during that period was 3.6 points with a minimum of 1.92 points in 2006 and a maximum of 4.4 points in 2016. The latest value from 2019 is 3.9 points. For comparison, the world average in 2019 based on 141 countries is 4.07 points as it is shown in figure 1.

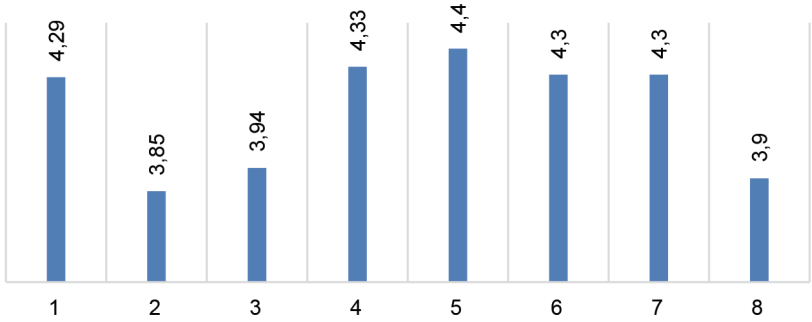

Figure 1 IRI improvement during 2012-2019. National roads category Source: ARA year 2022

In 2008 a loan from the World Bank was approved to finance, for the first time, high priority rehabilitation and maintenance works on the non-concessioned paved network, leading to the development of a long-term maintenance strategy based on the gradual expansion of performance-based contracts, a modality that is currently being replicated in other countries around the world.

3 Origins and definition of the performance contracts

The concept of performance-based contracts were not new in Albania, but it was carried out on the national road system since 2008 successfully. For primarily funded for national road. Already in 2010-2023, building on the experience of the concession program, and with the World Bank's assistance, the National Directorate of Roads of Albania (NDRA), had initiated a performance-based routine maintenance type of contract called the "km-month" that was designed to apply to the non-concessioned paved roads which had recently been paved or rehabilitated and were in good condition. Those contracts were signed for a period of 4 years and paid by a lump-sum monthly fee. Payment was made not on the basis of unit rates for different items of works, but on the basis of the Contractor's compliance with pre-determined quality standards and outcome as specified in the contract document. In addition, the system allowed for penalties to be applied when the desired quality or level of service was not achieved.

The success of the concession and the "km-month" contract programs prompted NDRA in 2008-2020 to imagine a new system that would combine both the rehabilitation and routine maintenance component into one contract, while keeping the concept of performance-based and financing the system with local funds complemented by the Bank's loan. That new system called Performance originated in reaction to several factors [4, 7]:

- Delays accumulated in the implementation of the Bank-financed Highway Project on-going at the time
- NDRA's retrenchment process that caused an increasing shortage of personnel in the provinces for supervising and measuring the vast quantities of activities
- The frequent cost overruns resulting from inadequate designs and leading to increased quantities of activities included in the original Bill of Quantities
- The need to focus more on customers' satisfaction, seeking to identify outcomes, products and services that road users expect to be delivered, and to monitor and pay for those services on the basis of customer-based performance indicators;

- The desire to shift greater responsibility to Contractors throughout the entire contract period in order to stimulate and profit from their innovative capacity,
- Make better use of and accelerate disbursements of available Bank's funds; and finally,
- Promote a system that could reasonably be expected to achieve cost-effectiveness compared to the traditional system.

In order to address those issues, the new system was designed with the following features in mind:

- Focus would be on road users' satisfaction and on Contractor's performance to achieve a minimum level of service, rather than on inputs, that is, quantity activity and unit rates compliance;
- Require the Contractor to set up his own quality control system, thus reducing the need for time and staff consuming supervision, by eliminating redundant quantities and quality-testing of activities performed, and keeping inspection team size and tasks to a minimum;
- Promote lump-sum contracts in order to reduce the risk of cost overruns;
- Require the Contractor to carry out a detailed engineering design before initiating the works, thus reducing the delays that are due to a lack of stock of prepared sub-projects;
- Reduce the risk of unsatisfactory quality in the capital rehabilitation works since the Contractor is obliged to maintain the roads over a five-year period;
- Foster innovation on part of the Contractors in the programming and execution of works by making payments tied to end results and level of service rather than to rigid specifications related to workmanship.

The system applies to a paved sub-network that needs to be rehabilitated over a portion of its length and subsequently maintained. Rehabilitation works are carried out during the first 12 to 18 months of the contract, while maintenance activities are undertaken throughout the 5-year contract period. The network is defined by the road agency and comprises contiguous or area specific sections of roads having a total length generally ranging from 1000 to 1333 km. The contract specifies the sections that need rehabilitation as well as the minimum solution or overlay thickness that is required in order to ensure a positive Net Present Value for the investment at a 12 discount rate. Experience shows that such information is generally sufficient for bidders to make meaningful proposals. At the end of every month, the contractor provides a summary of the works that he has completed in accordance with the "Program of Activities" that he submitted with his Detailed Engineering project. Each activity is paid in terms of a age of the total rehabilitation works contract.
Finally, the performance Contract provides the mechanisms to be used in the case of disputes. So far, disputes are resolved through an appointed Arbitrator and local Tribunals. Albanian government is still on the way to try hard for consolidation of the system missing the inventory of national assets which was the priority, in order to see large investments that have been affected their growth through out the whole year of the life time design of roads. The government plans to finance through public investments about 5 billion euros during the following four years 2024-2027, according to the plans of the Ministry of Finance in the Medium Term Framework. The government will keep the level of public investments high with about 125 billion lek per year (1.2 billion euro) per year, in a total of 515 billion lek (5 billion euro) during the next five years. The volume of public investments is expected to remain at around 4.8% of GDP in the following years, accounting for over 16 of total budget expenditures.

4 Outcomes

The objective to improve access to essential services and economic markets, via the provision of all-weather roads, was substantially achieved with minor shortcomings. The main findings show that positive impacts from SLRP had been largely sustained since project completion. "Improved road quality: The impact estimates show that SLRP improved the condition and quality of the nearest motorable road by 35 age points more in the beneficiary communities. " Improved access to health facilities: Households in the treatment communities reported that access to health infrastructure has improved because of better connectivity, which is equivalent to a 27 % reduction compared with average travel time in the control communities (56 minutes)." Improved access to educational facilities: The study showed that the road rehabilitation project led to improvement in access to secondary school. The SLRP project reduced travel time also the price of farmland is increased in the communities that were connected with the improved road. Reductions in travel time and related features are listed below in table 2 with the data for four segments highlighted.

Table 2 Reduction in Travel Times on Selected Segments Rehabilitated by SLRP

Reduction in travel times on selected segments rehabilitated by SLRP			
Road segment	**Length [km]**	**Reduction in travel time [minutes]**	**Road classification**
Lezhe—Kallmet	12.8	45 to15	local
Ura e Gorices—Fshat Mbreshtan	7.8	30 to 8	local
Valae—Erind	5.4	30 to 10	local
Xarre—Fshati Pillake	10.9	180 to 20	regional

The actual data show that the investment item has generally had a lower realization than the plans, but still, from 2014 to 2023, 795 billion ALL or 7.5 billion euros have been disbursed in this item from the budget, according to official data from the Ministry of Finance. Traffic volume: Data from ADF show significant increases in traffic volume in the past 10 years in selected segments (Table 3). The increase in traffic volumes can partly be attributed to project investments, although the extent is unclear.

Table 3 Increase in Traffic Volumes of Selected Local and Regional Road Segments Rehabilitated by SLRP, 2008–2018

Increase in traffic volumes of selected local and regional road segments rehabilitated by SLRP, 2008–18					
		Total Vehicle per Day			**Increase 2008-2018**
Region	Road Segment	2008	2010	2018	[%]
Fier	Strum Qafe Marinez	300	396	575	79
Berat	Ura e Gorices—Fshat Mbreshtan	100	112	297	197
Shkoder	Vau I Dejes Nenshat	70	82	479	584

5 Efficiency

The project is assessed to have achieved its objectives efficiently. It is rated as substantial. At project completion, the economic rate of return (ERR) of the project was estimated to be 18.8 compared with 16.0 at appraisal. Both the analyses used the RED (Roads Economic Decision) model with similar assumptions of a 15-year evaluation period and 12 discount rate applied to the same set of 11 road sections. Individual ERRs for the road sections ranged between 5.8 and 51.4 at project completion, compared with 12 to 18 at appraisal.
The improvement in ERR was mainly owing to the lower actual upgrading costs and higher annual traffic growth rate found on average on the project roads. The analysis did not consider any additional long-term benefits from the institutional development component. The RED model captured the primary benefits of the project, which are the reduction in vehicle operating costs and passenger time costs.
The economic analysis at project completion used the actual upgrading costs and the actual annual traffic growth rate from 2008 to 2010 for each project road. On average, the contract costs were 13 less than the estimated costs at appraisal, but the actual cost was 16 higher than the contract costs, a marginal increase of 3 . The average traffic on the project regional and local roads increased from 207 vehicles per day in 2008 to 250 vehicles per day in 2010, representing an average traffic growth rate of 9.8 per year. In comparison, the traffic growth rate adopted for the ex ante economic analysis was 8.0 per year [3, 8].

6 Conclusion

This project is to support the introduction of simple road asset management systems to improve maintenance planning, develop service-level agreements for effective maintenance execution, and to support the development of sustainable financing options for the network. ADF has started supporting municipalities in prioritization of investments and will continue its support during implementation. The ADF will monitor compliance with these agreements [5]. The project team appropriately supported a sector wide approach in responding to the government's priorities and resource needs for rehabilitating secondary and local roads.
The risk assessment during appraisal and implementation was adequate. The following main risks were identified: governance issues; inadequate ownership by the communities; inadequate capacity on the part of the implementing agency; and diminished commitment to institutional reform in the sector; and inadequate maintenance on improved roads.
The financial arrangements of the implementing agency were judged to be adequate, however, because the risk of corruption was considered high, mitigation measures were incorporated into the project during preparation. Similarly, the procurement risk was appropriately assessed as high. Safeguards policy issues were adequately addressed. The price of farmland for treated communities increased by 1,437 lek per square meter, compared to 787 lek per square meter in the control communities.
The survey, however, also indicated misgivings on the part of the beneficiaries about whether the rehabilitated secondary and local roads would continue to be maintained to all-weather standards.

7 Recommendation

Implementing a successful multidonor programmatic approach to sector development requires the combination of government commitment with credible planning and common rules of engagement. This project was embedded in a larger SLRIP, which the government was demonstrably committed to.

Concentrating competencies within one agency may frustrate future decentralization of responsibilities. Shortly after project completion, the government undertook a territorial reform that reorganized LGUs and transferred to them the responsibility for managing the secondary and local roads under their jurisdiction. This sudden development left most LGUs underprepared for their new duties. Further capacity building for LGUs is needed so that they can adequately perform this function.

In the absence of need-based and credible linkages to resource allocation, a road asset management system may not get sufficient traction. Following project completion, the Road Maintenance Planning System (ROMAPS) software should be used to any significant extent for its intended purpose of prioritizing, planning, and apportioning funds for road management activities. This can be attributed at least partly to the perception that the data were unlikely to be used as a basis for resource allocation.

The ongoing Result-Based Road Maintenance and Safety Project seeks to maintain the condition and improve the safety of road networks and strengthen sustainable and efficient road asset management and safety practices. To provide a qualitative functioning of the roads, a systematic network performance and quality monitoring are required.

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