

**Terms of Reference**  
for consulting services  
financed under a World Bank executed Trust Fund

Design and Procurement of long-term pilot contracts  
for the  
**Performance-based Management and Maintenance of Roads**  
**(Output-based Aid Approach)**

## **I. Introduction and background**

The Governments of Chad, Cape Verde, Tanzania and Madagascar are seeking to increase the efficiency and effectiveness with which the management and maintenance of the countries' road network is carried out. This is motivated by the recognition that the road network constitutes the single largest asset owned by the Government, and that a less-than-optimal system for the management and maintenance of that asset generally results in huge losses for the national economy. This occurs not only in the form of road deterioration and massive reductions in road asset value, but even more so in the form of increased vehicles operation costs which have to be borne by road users and which reduce the competitiveness of any given country in an increasingly global economy.

The Governments of the four countries mentioned above intend to combine well-known and traditional methods of road rehabilitation and reconstruction with new concepts and instruments for the management and maintenance of that part of the road network which is still in relatively good condition. This should avoid a premature deterioration of road assets in general, and assure that road users can count on a level of service which is adequate for their needs, and at the same time keeping the cost down for providing those service levels.

**Performance-based contracting for the Management and Maintenance of Roads (PMMR)** is a new concept designed to increase the efficiency and effectiveness of road maintenance operations. It should ensure that the physical condition of the roads under contract is adequate for the need of road users, over the entire period of the contract which is normally several years. This type of contract significantly expands the role of the private sector, from the simple execution of works to the management and conservation of road assets.

In **traditional contracts for maintenance works**, the Contractor is responsible for the execution of works which are normally defined by the Road Administration or the

Employer, and the Contractor is paid on the basis of unit prices for different work items, i.e., a contract based on “inputs” to the works. While this modality often brings improvement over force-account maintenance practices, the results are in many cases still less-than-optimal. The problem is that the Contractor has the wrong incentive, which is to carry out the maximum amount of works, in order to maximize its turnover and profits. Under this traditional way of “contracting out” maintenance works, it has been observed that even if a lot of work is carried out and much money is spent, the overall service quality for the road user depends on the quality of the design given to the Contractor who is not accountable for it and the results are sometimes not satisfactory.

The **Performance-Based Management and Maintenance Contract** (PMMR) tries to address the issue of inadequate incentives. During the bidding process, contractors compete among each other by proposing a fixed monthly lump-sum fee per km of road to be paid to them. It is important to understand that contractors are not paid directly for “inputs” or physical works (which they will undoubtedly have to carry out), but for “outputs,” i.e., the initial rehabilitation of the road to pre-defined standards (if so required by the bidding documents), the maintenance service of ensuring certain quality levels on the roads under contract and specific improvements (if so required by the bidding documents). The monthly lump-sum remuneration paid to the Contractor will cover all physical and non-physical maintenance services provided by the Contractor, except for unforeseen emergency works which would be remunerated separately. The initial rehabilitation works which have been explicitly specified by the Employer in the contract, would be quoted on the basis of measurable output quantities and paid as performed. In order to be entitled to the monthly payment for maintenance services, the Contractor must ensure that the roads under contract comply with the service quality levels which have been specified in the bidding document. It is possible that during some months he will have to carry out a rather large amount of physical works in order to comply with the required service levels, and very little work during other months. Yet his monthly payment remains the same as long as the required service levels are complied with.

One fundamental feature of the performance-based contract is that the Contractor is responsible for designing, scheduling and carrying out the actions he believes are necessary in order to comply with the service quality levels stated in the contract. The service quality levels are defined from a road user’s perspective and may include factors such as average travel speeds, riding comfort, safety features, etc. If the service quality is not achieved in any given month, the payment for that month may be reduced or even suspended. Under the performance-based contract, the Contractor has a strong financial incentive to be efficient. In order to maximize profits, he must reduce his activities to the smallest possible volume of intelligently designed interventions, which nevertheless ensure that pre-defined outputs (measured indicators of service level) are achieved and maintained over time.

PMMR contracts makes it necessary for the Contractor to have a good management capacity. Here, “management” means the capability to define, optimize and carry out in a timely basis the physical interventions which are needed in the short, medium and long

term, in order to guarantee that the roads remain above the agreed service quality levels. In other words, within the contract limitations and those required to comply with local legislation, technical and performance specifications and environmental and social regulations, the Contractor is entitled to independently define: (i) what to do, (ii) where to do it, (iii) how to do it, and (iv) when to do it. The role of the Road Administration and of the Employer is to enforce the contract by verifying if the agreed service levels have been complied with, as well as all other legislation and regulations the Contractor must comply with.

## II. Objectives

In view of the above, the Global Partnership for Output-based Aid (GPOBA) has made available a Trust Fund to finance various activities meant to support the introduction of PMMR contracts in the four countries mentioned above. This Trust Fund is administered by the World Bank, which is directly responsible for the procurement and the supervision of all actions financed from this source, including the consultant services described in the present document.

The World Bank therefore seeks to employ the services of a qualified consulting firm to provide support for the preparation and procurement of several Performance-based Contracts for the Management and Maintenance of roads. The network to be covered by this type of contract in the four countries are likely to be in the order of

- 150 – 300 km in Cape Verde
- 400 – 600 km in Chad
- 800 – 1200 km each in Madagascar and Tanzania

adding up to a combined overall network length in the four countries of approximately 2.800 km, including both paved and unpaved roads.

The procurement of the PMMR contracts to be prepared by the consultant will be carried out by the Governments of the four countries on the basis of the Sample Bidding Document published by the World Bank for the Performance-based Management and Maintenance of Road. This document is available on the World Bank's website under <http://www.worldbank.org/html/opr/procure/bdocpage.html>.

(Click on "Index of Standard Bidding and Proposal Documents" to locate this specific document.)

The role of the consultant consists mainly in the

**Part A: Execution of network-specific technical studies**

**Part B: Preparation of draft bidding documents and design of the procurement process**

The scope of services for the each of the two parts is described below. **In order for the consultant to fully understand the requirements of the present TOR's, it is indispensable that he is familiar with and fully understands the Sample Bidding Document mentioned above.**

**The selection of the consultant will be done based on the “Fixed Budget” provisions described in paragraph 3.5 of the World Bank “Guidelines for Selection and Employment of Consultants”** (these Guidelines can also be found at the same Website indicated above). This means that the consultant firm who has submitted the highest ranked technical proposal will be selected, provided that the financial proposal is at or below the **fixed budget, which is set at US\$ 470.000** (four hundred and seventy thousand US dollars).

### **III. Scope of Services**

For each of the four countries, the consultant will have to carry out the following specific tasks:

#### **Part A: Execution of network-specific technical studies**

##### ***Task A1: Selection of road sections to be included in PMMR contracts.***

At the beginning of the consultant’s assignment, the Government will provide to the Consultant a list of road sections about twice as long as the length to be covered by PMMR contracts; these will be the road sections which are initially considered to be candidates for PMMR contracts. The Consultant shall then carry out a quick condition survey of those road sections. Based on the report on the outcome of this survey, the consultant will recommend to the Government the roads for which PMMR bidding documents and contracts are to be prepared. The selection will be based on criteria such as (i) present condition of the road sections, in order to avoid road sections which require large-scale rehabilitation works before they can be maintained, (ii) resources available to finance PMMR contracts, and (iii) possibility to group and package road sections, avoiding too broad a scattering of separate sections over a large geographical area.

##### ***Task A2: Definition of service level for each road included in PMMR contracts.***

The consultant, in cooperation with the Government, will define the adequate service level for each road to be included in PMMR contracts. This exercise will be based on (i) information collected during field visits (condition surveys) to each road, (ii) analyses of typical road uses and road user needs for each road, including consultations and informal discussions with road users and local communities, (iii) establishing a link between road user needs and the required service level class, and (iv) affordability, or the availability of funding levels. Based on discussions between the Government and the consultant, the final list of road sections for which PMMR bidding documents are to be prepared will be determined.

##### ***Task A3: Evaluation of Contractor’s capacity.***

Given the nature of the PMMR contracts, the capacity of contractors must go beyond the mere execution of works and include the capacity to design and plan the required actions and interventions in order to maintain the contractually agreed service levels. The consultant will carry out a brief assessment of the private-sector entrepreneurs active in

the country and sub-region, in order to evaluate their technical, managerial and financial capacity. This shall not be limited to works contractors, but also include other firms which may have the technical, financial and management capacity to carry out a PMMR contract, with the use of subcontractors to carry out physical works. The purpose of this task is (i) to get an idea of the potential bidders and their capacity, (ii) to have a basis for defining pre-qualification criteria for bidders, (iii) to identify weaknesses of likely bidders and ways to mitigate risks linked to those weaknesses.

***Task A4: Grouping and packaging of road sections by contract.***

Based on the capabilities of contractors identified under Task A3 and the list of road sections defined under Task A2, the consultant will define an adequate size for PMMR contracts, in terms of the number of road-km included in each contract, and the total number of contracts to be let. The packaging should further attempt to maximize the efficiency of contractors, by avoiding as much as possible geographical dispersion of road sections, and promoting some degree of specialization for different road types (for example paved/unpaved, or high/low traffic).

***Task A5: Prequalification of Contractors***

Based on the outcome of Task A3, the consultant will prepare the draft Prequalification Document, based on the relevant Standard Prequalification Document published by the World Bank to which the necessary modifications will be made to render it applicable. The consultant will assist and advise the Government in advertising the prequalification process, obtaining the Bank's non-objection if World Bank financing is involved, launching the prequalification document, and support the Government in receiving and analyzing the documentation presented by contractors. The government will be responsible for the final selection of prequalified contractors including their notification. Prior to launching the prequalification process, the consultant will support the Government in organizing and holding a half-day workshop for potential bidders and supervision consultants, during which he will present and explain in detail the PMMR concept, and answer questions which may arise. The purpose of the workshop is to ensure that potential qualified bidders are fully aware of the size and nature of the upcoming PMMR opportunities and are encouraged to present themselves for prequalification.

***Task A6: Confidential price estimate for each contract.***

For the roads which have been selected to be covered under PMMR contracts, the consultant go back to the field to collect additional technical and engineering information, with the purpose to be able to define the likely interventions the contractor will need to execute in order to reach and maintain the defined service level for each road. The consultant will then prepare a confidential price estimate for each of the PMMR contracts to be let. This will be based on a detailed identification of all physical works and other activities (managerial, self-control, etc.) a contractor will most likely have to carry out to reach and maintain the defined service level. The cost estimate will be based on prevalent market rates demonstrated through recent or ongoing contracts in the country. The cost estimate shall include, in accordance with the definitions of the PMMR Sample Bidding Document, price estimates for (i) maintenance services, (ii)

initial rehabilitation works which may be necessary to reach the required service level, (iii) improvement works if required, (iv) emergency works, and (v) other services and actions, such as the contractor's self-control system. The purpose of the confidential price estimate is to obtain a benchmark price for each contract against which actual bids can later be compared. The consultant may consider the use of the HDM model (or similar) to assure a systematic approach to this task.

***Task A7: Estimate and pricing for Emergency works***

In cooperation with the Government, the consultant shall determine and justify whether unit prices for Emergency works should be subject to bidding or should rather be fixed in advance based on existing market rates. If the latter option is elected, he shall identify the prevailing market rates based on recent contracts or those under execution. He shall further determine the provisional sum for Emergency works for the contracts. Also, he shall identify the work units applicable for emergency works for which unit prices are to be established.

***Task A8: TOR's for supervision of PMMR contracts.***

Based on the individual conditions and circumstances of each PMMR contract to be prepared, the consultant will propose the most adequate supervision arrangements. These may be (i) through international or local consulting firms, (ii) through individual consultants, (iii) through Road Agency staff or (iv) through other suitable arrangements. The consultant will prepare the TOR's for the various types of supervision arrangements, including estimates of inputs and costs.

**Part B: Preparation of draft bidding documents and support to the design of the procurement process**

***Task B1: Definition of common characteristics***

Before the preparation of the draft PMMR bidding packages as such, the consultant will prepare a document which identifies those elements which will be common to all the bidding documents, and which proposes and justifies the choices and solutions to be adopted. This applies in particular to the information which will be included in the Bidding Data (Section III), the Special Conditions of Contract (Section V) and to parts of the Specifications (Section VI), but also to other issues, as for example the type of conflict resolution procedures to be adopted, the advertisements to be published, etc. The consultant shall assist the Government in deciding those characteristics before the individual bidding documents are finalized.

***Task B2: Preparation of draft bidding documents***

The consultant will complete the draft bidding documents for PMMR contracts, including plans, maps, drawings, specifications, etc. He will also advise the Government concerning the bidding advertisement process. Depending on the country, there could be between two and four draft bidding documents which need to be prepared, with a total of not more than 12 draft bidding documents for all four countries.

***Task B3: Pre-bid workshops***

The consultant will support the Government in the organization and execution of one-day pre-bid workshops for prequalified contractors (one workshop per contract), which may include field visits to the roads included in the PMMR contracts. The purpose of the workshops is to go through the various elements of the bidding documents, in order to make sure that bidders fully understand the nature of the contract and its requirements, and are thus able to present reasonable and responsive bids.

***Task B4: Support during bidding period***

The consultant will support the Government during the bidding period. In particular, he will, if needed, help the government respond to inquiries made by bidders and advise the Government on the Addenda to the bidding documents which may become necessary in order to clarify the requirements, to override errors and omissions, to accommodate changes, or to provide additional clarifications which may be necessary after the launching of the bidding process.

***Task B5: Quality Assurance Support during bid evaluation process***

While the Government will be solely responsible for choosing the winning bidders, the consultant will advise the Government during the bid evaluation period with the objective to assure the quality of the process. He will ensure that bid evaluation will follow the World Bank procedures, and ensure that bid evaluation reports follow the World Bank forms. If the consultant sees shortcomings in the work of the bid evaluation committee, or has any other reservations as to the appropriateness of the bidding and selection process, he will inform the Government and the Bank in writing.

## **IV. Other information and requirements**

**Cooperation with Government staff and training.** Since PMMR contracts are based on a relatively new concept which has not yet been widely applied in Africa, it is important that the consultant contribute actively to the learning process of Government staff and the personnel of local contractors and consultants which may later be involved in the execution or supervision of such contracts. **This aspect constitutes an essential element of the consultant's assignment, and must be complied with through the organization of at least two formal workshops per country.**

- The first workshop should take place during the consultant's first mission to the country, with the main purpose to explain (i) the concept of PMMR contracts, and (ii) the purpose of the consultant's assignment, including work plan, outputs, etc.
- The second workshop should take place at the time when the consultant finalizes the PMMR bidding documents, with the purpose to present and explain the result of the assignment.

In general, the consultant is expected to actively promote the dialog with Government staff in order to assure a maximum degree of information, transparency and transfer of knowledge.

**Estimated organizational setup of the assignment and staffing.** The consultant is solely responsible for proposing an organizational setup of the assignment which in his view is appropriate for carrying out the assignment, fulfilling the Terms of Reference and producing the required outputs. The World Bank has nevertheless some general ideas and suggestions about the organizational setup which reflect (i) the expectations of the Bank, (ii) the knowledge of the situation and desired outcomes, and (iii) the time frame for the delivery of outputs.

1. **Team Composition / Subcontracting:** It is expected that the consultant shall provide a two-person team of bilingual (French/English) specialists who will carry out on a continuous basis most of the work, applying a uniform approach, work methods and criteria to all four countries. It is not conceivable that the international consultant who wins the contract simply subcontracts most of the work to local consultants in the four countries. This does however not preclude the consultant to use local consultants for some specific work items and support services.
2. **Time frame:** It is expected that most of the work will be carried out within the first ten (10) months after the signature of the contract, during which the two-person team will spend almost all their time on this assignment. Some services, such as the support for procurement of PMMR's may extend beyond this time frame and into the second year of the contract.
3. **Travel:** It is expected that the two-person team operate from the firm's home base (or a branch office), and undertakes missions/visits to the four countries. For each country, two to three missions/visits are to be envisaged. It is also expected that some missions can combine visits to two or more countries covered by the contract. In most cases, the first mission to any given country will probably be the main mission (approx. 5 weeks), followed by one or two relatively short missions (see also section V. of these TOR's). The division between home-based work and mission time is expected to be around 50/50. When proposing the team members, the consultant should make sure that the proposed staff is actually available and aware of the intensity of the required travel. The first mission will probably be to Chad and Tanzania (starting June 15<sup>th</sup>, 2004); this will be the opportunity for the consultant's team to begin his assignment by studying a successful PMMR pilot contract which has been operative in Chad since mid-2001 (GENiS-RT on 440 km road section located on the link between N'Daména and Abeche).
4. **Team Qualification:** Since PMMR contracts are a relatively new concept which is not yet widely applied, it is unlikely that any consulting firm can come up with experts which have actual and significant experience in the practical application of PMMR arrangements such as described in the Bank's Sample Bidding Document. In addition, a long career and many years of experience in traditional road construction and maintenance may not necessarily be of much use for this assignment. It is much more important that the consultant's staff
  - is flexible and open to the new idea of PMMR contracts
  - is able to learn quickly and apply the new knowledge
  - is able to communicate effectively to convince others
  - has good writing skills in order to prepare clear and concise documents

- is ready and available to follow a rather intense travel schedule during one year
- has a solid professional background, preferably (but not necessarily) as road engineer and in road maintenance
- and has a certain amount of practical experience in developing countries

**Start, duration and input of the assignment.** As mentioned earlier, the entire assignment is expected to be completed within a total time period of not more than ten months after the signature of the contract, with the exception of Tasks B4 and B5, which may extend well beyond that period. It is estimated that the input for the two international experts will be in the order of 16-20 person/months, plus some time for local experts. It is however the consultant's responsibility to assess the required input, and he is free to diverge from this estimate if he thinks that it is necessary. Contract signature is expected to take place at the World Bank offices in Washington D.C. at the end of May, 2004, and the assignment should start in mid-June 2004.

**Consultant's price.** Although payment for the services is on a lump-sum basis, the financial offer of the consultant shall nevertheless include and specify all cost items, such as salaries and other staff remunerations, domestic and international travel costs, accommodation, per-diem, local transportation, office costs, reproduction of reports, holding of workshops, field visits, etc. Any cost item not specified in the consultant's offer shall be deemed to be included in other cost items for which a price has been quoted.

## V. Documents to be produced by the consultant

For each of the four countries, the consultant will produce the following outputs:

### 1. Technical Report, including

- the presentation of the outputs produced, in compliance with all tasks of Part A
- a brief description of how the consultant carried out his work leading to the outputs related to Part A
- a section proposing the common characteristics for the PMMR bidding documents (Task B1)
- the draft Prequalification Document (Task A5) as a separate Annex

It is expected that much of the Technical Report will be produced during the first (and main) country mission, and completed and presented either at the end of that mission or shortly thereafter.

**2. Draft Bidding Documents** for the PMMR contracts (Task B2). It is expected that the Bidding Documents will be produced at the consultant's home base, soon after the first (main) mission.

**3. Final Report.** This relatively short report will summarize the overall assignment, and specifically present the consultant's work on (and outcome of) the bidding process for the PMMR contracts.

**Language of the documents:** (i) For Madagascar and Chad, the consultant shall produce the required output reports in *French* language. (ii) For Tanzania, the language is *English*. (iii) For Cape Verde, the Technical and Final Reports can either be in Portuguese (preferred) or in French. The Cape Verde bidding document will be in French, since there is no Portuguese version of the Bank’s Sample PMMR bidding document.

**Delivery of the documents:** The consultant will deliver the required output documents in parallel to the Bank and to the Road Agency of the countries concerned.

- Draft versions of each document are to be delivered in electronic format (by E-Mail and/or CD)
- Final versions of each document are to be delivered both in electronic format (by E-Mail and CD’s) and 10 hardcopies (paper version). (2 hardcopies to the World Bank and 8 hardcopies to the Road Agency.)

## VI. Payment terms and penalties for delays

The consultant’s services shall be remunerated on a lump sum basis, with each output document as described in section IV above being linked to a specific amount expressed as a percentage of the total contract amount. The following table shows the applicable percentages, or “relative worth” of each output.

	%-age of total payment	Technical Report	Bidding Documents	Final Report
Relative weight in % ---->		45	40	15
Cape Verde	15	<b>6.8%</b>	<b>6.0%</b>	<b>2.3%</b>
Chad	20	<b>9.0%</b>	<b>8.0%</b>	<b>3.0%</b>
Tanzania	30	<b>13.5%</b>	<b>12.0%</b>	<b>4.5%</b>
Madagascar	35	<b>15.7%</b>	<b>14.0%</b>	<b>5.2%</b>

At the beginning of the assignment, the contractor may claim an advance payment of 30 % of the total contract amount. This advance payment will be deducted from all payments made under the contract at a rate of 30 %.

The consultant will have the following deadlines for the delivery of the **Technical Reports** and **Bidding Documents** :

Four months after contract signature:	One country completed
Six months after contract signature:	Two countries completed
Eight months after contract signature:	Three countries completed
Ten months after contract signature:	Four countries completed

The penalty for delays will be US\$ 100 per day and per country for which there is a delay.