

添付資料-6：関係者との協議議事録

### ケニア国関係者との協議リスト

年/月/日	時間	会議方式	先方出席者	主な議題
2021/11/29 (月)	0730 - 0800 (KST)	対面	MoTIHUD	調査概要説明・協力依頼
2021/11/29 (月)	1200 - 1230 (KST)	対面	KRB	調査概要説明・協力依頼
2021/11/30 (火)	1000 - 1045 (KST)	対面	KeNHA	調査概要説明・協力依頼
2021/11/30 (火)	1220 - 1240 (KST)	対面	KeNHA	調査概要説明・協力依頼
2021/11/30 (火)	1400 - 1455 (KST)	対面	JICA ケニア事務所	調査概要説明
2021/12/01 (水)	0900 - 0950 (KST)	対面	KURA	調査概要説明・協力依頼
2021/12/02 (木)	1100 - 1145 (KST)	対面	KWS	調査概要説明・協力依頼
2021/12/02 (木)	1440 - 1530 (KST)	対面	KeRRA	調査概要説明・協力依頼
2021/12/03 (金)	1110 - 1220 (KST)	対面	PPRA	調査概要説明・協力依頼
2021/12/06 (月)	1245 - 1315 (KST)	対面	NCA	調査概要説明・協力依頼
2021/12/07 (火)	1215 - 1250 (KST)	対面	現地施工業者	調査概要説明・協力依頼
2023/01/23 (月)	0900 - 1010 (KST)	オンライン	現地カウンターパート	調査成果発表

打合せ議事録（MoTIHUD）	
打合せ	: MoTIHUD への表敬訪問、面談
日時	: 2021/11/29(月) 7:30-8:00
場所	: MoTIHUD 6階 (Room of Chief Engineer)
参加者	: MoTIHUD (Eng. J.M.Kung'u) : JICA プロジェクトチーム (辻野、小澤)
議事次第	<ol style="list-style-type: none"> <li>1. 本プロジェクトの概要説明</li> <li>2. 協力依頼レターの確認</li> <li>3. 質問票の説明</li> <li>4. PBC に関する議論</li> <li>5. その他</li> </ol>
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。 <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へはインタビューを実施する予定（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>2. 協力依頼レターの確認</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームよりプロジェクト協力依頼のレター受領状況について確認。 →MoTIHUD は既に JICA ケニア事務所からレターを受領済みで、各道路管理者のダイレクターへの連絡も実施済みと回答。</li> </ul> <p><b>3. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。 <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> </ul> <p><b>4. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ ケニアでの PBC 導入は成功といえるか？またそれはなぜか？（JICA チーム） →MoTIHUD とすれば非常に成功しているといえるだろう。持続性に関して懸念があったが、①新設道路のほとんどは建設後に PBC で管理されている、②業者、道路管理者を対象とした継続的な PBC 研修が実施されている、こともあり道路は以前よりも良好な状態である（特に舗装道路）。（MoTIHUD）</li> </ul>

### 打合せ議事録（MoTIHUD）

- ・ PBC に関して課題はあるか？（JICA チーム）  
→あるとすれば予算の制約であろう。維持管理費用は燃料税に依存している。維持管理の方針として Poor 状態の道路をまずは良好な状態にすることが優先であり、その後 PBC へと移行することとなるが、ここまで多くの費用が必要となる。MoTIHUD としては省内で啓蒙活動を通じて地方への予算も維持・拡大していく考えである。
- ・ 地方自治体への PBC の拡大も目指しているのか？（JICA チーム）  
→その通りである。ただし、地方自治体は道路公社と比較して管理延長に対する維持管理予算の配分が少ない。また管理能力が不十分であると考えられる。（MoTIHUD）
- ・ 地方部では施工業者の能力・教育も不十分であろう（JICA チーム）  
→KIHBT による研修は地方のキャンパスでも実施されている。遠くの地方部からの参加も制約はないため、研修へのアクセスは確保されていると言える。（MoTIHUD）
- ・ 今回の調査結果はどのように使用されるのか？（MoTIHUD）  
→本調査結果については、JICA が TICAD においてケニア周辺国へ紹介することを考えている。特に JICA プロジェクトによりケニアで PBC が導入され、拡大していることを成功事例として他国へアピールしたい狙いがある。（JICA チーム）

#### 5. その他

- ・ 道路管理者用の質問票 URL を送付するので参考に回答頂きたい。（JICA チーム）  
→承知した。（Kung'u 氏）

以上

打合せ議事録（KRB）	
打合せ	: KRB への面談
日時	: 2021/11/29(月) 12:00-12:30
場所	: KRB 4階 会議室
参加者	: KRB (Eng. Tom Omai, Mr. Thomas Bundi Mpuria, Ms. Tabitha Kariuki) : JICA プロジェクトチーム (辻野、小澤)
議事次第	1. 本プロジェクトの概要説明 2. 質問票の説明 3. PBC に関する議論 4. その他
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。               <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へはインタビューを実施する予定（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。               <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・ 道路管理者用の質問票 URL を送付するので参考に回答頂きたい。（JICA チーム） →承知した。（KRB）</li> </ul> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ ケニアにおける PBC の導入・展開に関して、どの様に捉えているか？（JICA チーム） →道路のサービスレベルが向上し快適である。効率的な維持管理が進んでいると考える。（KRB）</li> <li>・ PBC のコストメリットについて調査する予定である。KRB の資料（APRP）に PBC の km 単価が示されているが、これはどの様に算出しているのか？（JICA チーム） →詳細な算出方法は承知していないが、全 PBC 案件の平均値であろう。実際には PBC 契約の中から該当する工種・金額を抽出して算出する必要があるだろう。（KRB） →承知した。検討に必要な資料・情報等について後日提供を依頼するため、ご協力頂きたい。（JICA チーム）</li> </ul>

### 打合せ議事録（KRB）

→承知した。（KRB）

- ・ Cost Estimation Manual に関して 2 年毎の単価更新を予定しており、本年中にコンサルタントの調達を想定して準備を進めている。（KRB）

→情報共有頂き感謝する。（JICA チーム）

#### 4. その他

- ・ PBC に関する会議がタンザニアにおいて 12 月に開催される予定。後ほど、資料・詳細を共有する。（KRB）

→承知した。（JICA チーム）

- ・ 本調査は KRB としても重要と考えており、結果についても非常に興味があるため共有して欲しい。（KRB）

→結果の共有については JICA に相談する。（JICA チーム）

以上

写真



打合せ議事録（KeNHA, Eng. Mutua）	
打合せ	: KeNHA への面談
日時	: 2021/11/30(火) 10:00-10:45
場所	: KeNHA, Barabara Plaza, Block C, 3 階
参加者	: KeNHA, Road Asset and Corridor Management (Eng. Anthony Mutua, Eng. Patrick Kibiti) : JICA プロジェクトチーム（辻野、小澤）
議事次第	<ol style="list-style-type: none"> <li>1. 本プロジェクトの概要説明</li> <li>2. 質問票の説明</li> <li>3. PBC に関する議論</li> <li>4. その他</li> </ol>
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1) Kiambu から Limuru の路線（Ebenezer 社が担当）

2) Thika から Gatakaini の路線（Policol 社が担当）

- Pure PBC の実施前には、道路の状態を使用可能なレベルにまで改善させる作業（定期メンテナンス）を実施している。
  - 以前、KeNHA では道路維持管理が滞っていたため、主にハイブリッド型 PBC（数量精算型メンテナンスと路面外 PBC の組み合わせ）を使用していた。ただし、入札の際に施工業者が指示された数量精算型の作業に価格を集中し、PBC の作業には低い価格を設定して入札していることに気づいた。このため現在は、ハイブリッド型 PBC から脱却しようと、定期メンテナンスを実施した後に Pure PBC を導入するという管理方式を試みている。
  - Thika から Garissa の路線では 24 ヶ月の定期メンテナンス期間を設定して道路状態の改善を進めており、路線管理者は排水溝と植生の維持管理のために別の PBC 請負業者を雇用している。
  - このように KeNHA では現在、道路が良好な状況になってから Pure PBC に移行しようとしており、PBC の契約期間も 5 年から 10 年に延長しようとしている。
  - 路面の調査に関して、iDRIMS によって行われている IRI 測定に加えて、舗装の強度を測定するための FWD 試験を実施するためにコンサルタントと契約をしている。ここで収集されたデータは、舗装の強化が必要な地域の優先順位付けに使用される予定である。これにより、道路補修の効率化を図り、利用可能な資源を有効に活用することを期待している。FWD は専用車両により全国を移動しながら測定を行い、DRIMS と同様にチャンピオン（操作習熟者）が操作する。
  - PBC はこれらの様な新技術が導入されるにつれ、今後も進化していくだろう。以前はポットホール修繕に集中していたが道路状態が良くなってきたため、今後は交通安全といった面にもシフトしていくだろう。
  - 支払い金額の減額に関して、施工業者によっては減額をあまり気にしていないこともあるが、KeNHA としては継続的なコンプライアンス違反に対してきちんと減額を実施している。なお、一度減額した金額については同業者には返還されない仕組みである。
  - KRB が APRP で示している PBC の km 単価については、ハイブリッド型 PBC の金額であるため、数量精算型メンテナンスのコストが含まれており高くなっているのではないかと見られる。将来的には Pure PBC の導入が進み PBC コストは下がるだろう。
- JICA チームが PBC のコスト調査を実施予定とのことであるため、KeNHA からは関連工事の資料等を共有する。

#### 4. その他

- PBC 道路と非 PBC 道路の比較調査として、以下の路線で IRI の計測や現地調査を再委託業者により実施する予定である。（JICA チーム）

1) Kiambu to Limuru (Pure PBC)



- 2) Thika to Gatakaini (Pure PBC)
- 3) Makongeni to Kayonyo (Periodic Maintenance)
- 4) Kanyonyo to Mwingi (Periodic Maintenance)

→承知した。ちなみに Mwingi から Ukasi までの路線は、KeNHA が定期メンテナンス実施のための調達を行っており、これが完了後に PBC へ移行する予定である。(KeNHA)

以上

写真



打合せ議事録（KeNHA, Eng. Nyabuto）	
打合せ	: KeNHA への面談
日時	: 2021/11/30(火) 12:20-12:40
場所	: KeNHA, Barabara Plaza, Block C, 3 階
参加者	: KeNHA, Road Asset and Corridor Management (Eng. Kevin Nyabuto) : JICA プロジェクトチーム（辻野、小澤）
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以上

写真



打合せ議事録（JICA Kenya Office）	
打合せ	: JICA ケニア事務所への面談
日時	: 2021/11/30(火) 14:00-14:45
場所	: JICA ケニア事務所、会議室
参加者	: JICA ケニア事務所（Dr.Steve N. Mogere, Ms. Kato Mari） : JICA プロジェクトチーム（辻野、小澤）
議事次第	<ol style="list-style-type: none"> <li>1. 本プロジェクトの概要説明</li> <li>2. 質問票の説明</li> <li>3. PBC に関する議論</li> <li>4. その他</li> </ol>
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。               <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) ケニアでの PBC 導入は成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へインタビューを実施する予定（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。               <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> </ul> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ JICA から PBC の現状・課題等について、以下の情報共有があった。</li>   <li>・ PBC の有効性確認のため、以下の項目についても調査してみてはどうか。               <ul style="list-style-type: none"> <li>- PBC で管理することで、道路の寿命が延長されているかどうか。</li> <li>- PBC により損傷への対応時間が短縮されているかどうか。</li> <li>- IRI による道路の路面状態の比較。</li> <li>- 維持管理に用いられている金額が本当に縮減されているかどうか。</li> <li>- 各 RA で 5 件ずつほど、実際の契約を抽出して比較するのはどうか？</li> </ul> </li> <li>・ PBC が始まってから、女性就業者による側溝の清掃や路肩の草刈り等をよく目にするようになった。女性の社会進出や SDGs という面での評価もできるのではないかと？</li> </ul>

#### 4. その他

- ・道路管理者等から本調査の結果（報告書）を共有して欲しいとの声が挙がっている。報告書はコンサルタントから JICA に提出するため、関係者へは JICA から共有頂きたい。（JICA チーム）
- 報告書の共有について承知した。（JICA ケニア事務所）

以上

写真



打合せ議事録（KURA）	
打合せ	: KURA への面談
日時	: 2021/12/1(月) 9:00-9:50
場所	: KURA ナイロビ事務所、Room of . Assistant Director
参加者	: KURA (Eng. Nicholas C. Chelugo) : JICA プロジェクトチーム (辻野、小澤)
議事次第	1. 本プロジェクトの概要説明 2. 質問票の説明 3. PBC に関する議論 4. その他
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。               <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へはインタビューを実施する予定（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。               <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・ 道路管理者用と施工業者用の質問票 URL を送付するので、各事務所の担当者へ共有して回答頂きたい。（JICA チーム）</li> </ul> <p>→質問票の共有・回答について承知した。（KURA）</p> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ KURA での PBC の現状について、以下の情報共有があった。               <ul style="list-style-type: none"> <li>- KURA は当初、4 つの道路を PBC のパイロットプロジェクトとしてスタートした。</li> <li>- その後も PBC を継続的に実施してきており、現在では KURA のナイロビ地域では道路ネットワークの約 90% が PBC で管理されている。今年度は、他の地域でも PBC の導入が予定されている。</li> <li>- ナイロビ地域での PBC は、4 つの契約を実施しており契約期間は 18 ヶ月である。ロット 1 と 2 は 2021 年 8 月 10 日に終了し、ロット 3 と 4 は 2021 年 12 月 3 日に終了予定である。契約期間を 18 ヶ月としたのは成功であったが、総管理延長が 532km であ</li> </ul> </li> </ul>

り、あるロット（業者）は 140km 以上、別のロット（業者）は 159km の道路を PBC で管理した。このような大型（長い道路延長）の契約は、万が一ある業者が理解不足等で契約違反や不履行があった場合に非常に大きなリスクとなる。このため、今後の PBC 工事発注では、契約ロット（道路延長）を短縮することでリスクを分散させる予定である。

- 来年度（2022/2023 年度）には、ナイロビ地域では 16 の PBC 契約を結び、地域内の全ての道路を PBC の下で維持管理する予定である。なお、契約期間は 24 ヶ月に延長される予定である。
- 契約期間は、当初は 9 ヶ月であったが、その後 12 ヶ月、さらに 18 ヶ月と延長してきた。今後は 24 ヶ月を予定しており、これは業者や管理者にとってより持続可能な契約期間であり、PBC 業務と指示業務のバランスも取れる。なお契約期間は、指示業務と PBC 業務の比率が 30：70 を超えないよう設定している。
- 指示業務は IMP 期間中（6 ヶ月以内）に実施しているが、全ての契約数量を実施するのではなく、24 ヶ月契約の残りの期間（18 ヶ月）で発生する可能性のある修繕・補修等のために多少の数量を残している。以前の PBC 契約では指示業務はすべて最初の 3 ヶ月でのみ実施されていたため、その後に雨などによりポットホールが発生するといったことがあった。このような経験から、教訓として IMP 期間で節約した数量を、後の契約期間内に使用するといった対応をしている。
- KURA の入札書類では、経営者と実務者とで少なくとも 1 人ずつは PBC のトレーニングを受けていなければならないことを規定している。今後発注する 16 の PBC 業務の入札会議を実施した際には、関心のある業者へ性能仕様、罰則、解約条項について説明を行った。契約金額全体の 30%を超える違約金（減額金）が発生した場合、契約は打ち切られることとなる。また、これまでは違約金（減額金）が同契約の指示業務に使われていたが、今後は同契約内では利用されないこととなる。なお支払証明書には、違約金に関する情報が記載されるようになった。
- KURA ではほとんどのスタッフが PBC 研修を受講しており、残りのスタッフについても PBC 業務をより効果的に監督できるように訓練するための議論が行われている。
- KURA での PBC 管理延長等、統計記録を共有する。また、ステータスレポートを共有します。ちなみに、18/19 会計年度には KURA の道路と地方道を組み合わせた再生プログラムが行われ、PBC の契約はほとんどなかった。
- KURA ではピュア PBC での管理道路はまだないが、PBC による道路管理の適用範囲を拡大することを計画している。
- レスpons時間については、PBC では契約書内に規定されておりポットホールであれば遅くとも 2 日以内には対応が必要であるが、検出直後にすぐ対応する業者もいる。BOQ 契約/指示業務では、業者のプログラムに応じて 3 か月以上かかる可能性もあるため、道路利用者はその長い間苦しむことになる。
- 今期の PBC 契約に関しては、ロット 1 の業者が最も良いパフォーマンスであり、ロット 4 の業者が最もパフォーマンスが悪かった。ロット 4 の業者には次の課題があっ

た。

- i) PBC 業務に対する入札単価が低かった。
- ii) PBC 研修は受けていたが、PBC に対する業者の対応が悪かった。
- iii) 管理道路の一部地域（イーストランド）では不法投棄が多く発生していたため、設定したサービスレベルを維持することが困難であった。
- iv) SCU が適切に構成されていなかったため、検出後のレスポンス時間が長すぎた。交通量が多い道路では、損傷の検出・対応に時間がかかるため「1 時間以内に対応」というのはほぼ不可能である。また、業者は事故対処のために警察と調整せずに、破損したガードレールが規定された期間通りには修理されなかった。
- v) KURA 側としては、契約書に明確な契約の打ち切りに関する条項や記載がなかった。このため、業者に行動を促すために多くの経営会議を開かなければならなかったが、契約上は彼らとの契約を終了することができなかったため、業者側が有利な状況であった。

#### 4. その他

- ・ KeNHA、KURA、KeRRA については、PBC 道路と非 PBC 道路の比較調査として、IRI の計測や現地調査を再委託業者により実施する予定である。KURA の対象道路は、Karen Road, Langata Road と Lower Kabete – Ngecha の道路である。（JICA チーム）  
→承知した。（KURA）

以上

写真





打合せ議事録（KWS）	
打合せ	: KWS への面談
日時	: 2021/12/2(火) 11:00-11:45
場所	: KWS 本部（ナイロビ国立公園内）、Room of Ag. Director
参加者	: KWS（Eng. Walter Ochieng） : JICA プロジェクトチーム（辻野、小澤）
議事次第	1. 本プロジェクトの概要説明 2. 質問票の説明 3. PBC に関する議論 4. その他
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要な領域について業者からフィードバックがあることは良いことである。

- PBC に関する KWS スタッフの技術的能力に関しては、13 人の技術スタッフ（全員）がすでに研修を受けており、さらに 5 人（KRB からの研修エンジニア）に対して研修を実施する予定である。
- KWS は過去に DRIMS を購入しており、研修を受けた職員により 2 年度活用されている。また、KRB を通じて ARICS のデータ収集に役立つツールとして、タブレットとセンサーを使用する Road Mapper という機材を入手した。KWS としては、多くのツールが導入されてはいるが、これらが統合されていないためケニアの道路セクターにとって良いものとは言い難い。より多くのデータを所持しそれらをうまく管理できるようにするために管理システムの調和・統合が必要であろう。
- PBC 契約でのコンプライアンス違反があった区間については、支払い金額の減額を実施している。減額された金額は、契約終了時に（成功報酬や緊急報酬と合わせて）数量精算型の道路改修工事に使われる。この契約終了時の工事の実施に関して、多くの業者は不満を漏らしている。
- KWS は、Amboseli の業者と留保金に関する訴訟を行っており、留保金がいつ支払われるべきか（引渡し時か、瑕疵担保責任期間の終了時か）が議論されている。
- PBC の入札書類の変更について、PPRA によって制定された文書は、道路公社たちから提案されたコメントのうち、何点かは反映されていなかった。FIDIC に関しては、PBC にはイエロースタンプブックが、数量精算型にはレッドブックが最適と考える。性能仕様書は良いが、仕様書に記載されている条件は数量精算型の工事のためのものである。道路公社たちは、特に契約条件や違反に対する罰則について、PPRA にフィードバックをする機会が必要である。
- PBC の経験がある施工業者に、PBC の契約図書の改善について議論するセミナーを開催するのが良いであろう。このような場で話し合った改善点を PPRA に伝え、PBC の標準契約図書を改善できるようにするべきだろう。
- PBC と数量精算型工事の対応時間について、緊急時の対応は PBC が特に速く Amboseli の業者は迅速に対応していた。従来型の契約・数量精算型の場合、本部への通知、予算作成、作業計画、手配要請、請負業者の見積り取得、といった一連の手続きが必要となり 2~3 ヶ月はかかると思われる。PBC の場合、通知体制と業者による緊急時の費用負担により成立している。
- コスト面では、必要な措置を行うまでの対応時間が長い従来型の維持管理では時間とともにダメージが悪化するため、対応時間が短い PBC の方が修繕費用は安い。また、ナクル公園の道路の例として、通常、定期メンテナンス（4 ヶ月ほどの短期間）に毎年 1,600 万~1,900 万 KSH を費やしている。一方 PBC は年間 900 万 KSH で、契約期間中、継続的にサービスレベルが維持されることになる。このことから、コスト面では PBC の方が安いと言える。
- 現在、KWS は砂利道に関する研究と新技術（MTRD と共同でナイロビ国立公園の道路 55km）のために 1,900 万 KSH の予算を KRB から割り当てられている。KWS はま

だ収集したデータの分析を実施しておらず、砂利道と舗装道路の適切な干渉について分析する専門家が必要である。他の当事者と共有できる経年的な情報を持っている。もし JICA がこの研究で KWS とパートナーになることを望んでいるならば、それは可能である。

- ・ 2つの調査チーム（ガーナとザンビア）が、PBC の下で砂利道の維持管理をどのように行っているかを調査するために、KWS を訪問したと聞いている。
- ・ KWS の PBC 業務に関する統計データ等、調査に必要なデータは共有する。

#### 4. その他

- ・ KeNHA、KURA、KeRRA については、PBC 道路と非 PBC 道路の比較調査として、IRI の計測や現地調査を再委託業者により実施する予定である。（JICA チーム）
- 道路調査に関して KWS で実施するのであれば Voi Gate - Sala Gate と Manyani - Sala Gate の 2 路線が適切と考える。時間経過による劣化や成功度合いを確認することができるだろう。（KWS）
- この調査を本業務に追加するかについては、JICA チームの次回渡航時（2022 年 1 月頃）に議論する予定。（JICA チーム）

以上

写真



打合せ議事録 (KeRRA)	
打合せ	: KeRRA への面談
日時	: 2021/12/2(火) 14:40-15:30
場所	: KeRRA, Barabara Plaza, Block B, 4 階会議室
参加者	: KeRRA (Eng. Peter Gichohi, Eng. Enock Kombo Ariga, Eng. John Mativo, Eng. Jackson Magondu) : JICA プロジェクトチーム (辻野、小澤)
議事次第	1. 歓迎の挨拶 2. 本プロジェクトの概要説明 3. 質問票の説明 4. PBC に関する議論 5. その他
議事内容	<p><b>1. 歓迎の挨拶</b></p> <ul style="list-style-type: none"> <li>・会議参加者の自己紹介後に、KeRRA を代表して Eng. Peter Gichohi 氏 (Director of Roads) より以下の歓迎の挨拶が行われた。</li> <li>・現在、KeRRA と JICA は特に道路整備について良好な協力関係にある。</li> <li>・JICA プロジェクトの利点は以下の通りである。 <ul style="list-style-type: none"> <li>- 本邦研修、積算マニュアル、PBC ガイドライン、橋梁管理システム、等</li> </ul> </li> <li>・KeRRA は、道路・橋の維持管理に対する強力なパートナーシップを継続するための JICA のコミットメントに感謝している。</li> </ul> <p><b>2. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・JICA プロジェクトチームから、資料を用いて以下について説明。 <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へはインタビューを実施する予定（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>3. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。 <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・道路管理者用と施工業者用の質問票 URL を送付するので、PBC に携わっている担当者へ共有して回答頂きたい。（JICA チーム）</li> </ul>

→質問票の共有・回答について承知した。回答数の目標はあるのか。また、期日はいつまでか？（KeRRA）

→目標数は無いが、出来る限り多くの方から回答頂きたい。回答の期日は12月17日（クリスマス休暇前）を想定している。また、道路利用者への質問は、現地踏査時にインタビュー形式により実施する。（JICA チーム）

### 3. PBC に関する議論

・共有資料の PBC 道路延長は実際の延長より少ない。（KeRRA）

→KRB の HP から引用したデータであり、PBRM (Performance Based Routine Maintenance) や Low Volume Seal Roads programs を含まない延長である。（JICA チーム）

→KeRRA の PBC 契約延長について、KRB は燃料税を財源とするもののみを計上している。KeRRA では、ケニア政府の財政から資金提供を受けて実施している PBC もあり、約 4,000km の道路が PBC で維持管理されている。PBC で管理されている舗装道路と未舗装道路の詳細や、契約図書のサンプルについて後ほど共有する。（KeRRA）

・ AfDB-GoK が資金提供しているケニア中央部でのプログラム（Roads 2000）は終了した。最終バッチは PBRM の下で行われることになっており、現在進行中である。（KeRRA）

・ KeRRA の PBC 契約は、2017 年からロールオーバー方式を採用しており、道路の機能回復と 1 年間の瑕疵担保責任期間を設けた後、同一の業者により 3 年間の PBC を実施している。当初は維持管理部分に対する政府からの資金調達に不安があったため、調達段階で 2 つの契約を 1 つにした。

・維持管理契約では、業者は車道、排水施設、植栽について設定されたサービスレベルを維持することが期待される。PBC では、ポットホール、石積みの追加、アクセス道路や横断カルバートの設置など、いくつかの作業が指示により実施される。

・業者がサービスレベルを満たしていない場合、支払い金額の減額が行われる。差し引かれた金額が大きい場合には、第三者がサービスレベルを回復するために従事することが可能となっている。また、履行保証契約を利用して、不履行業者を罰することが可能である。

・必要な情報・資料について、表形式で取りまとめて提出すること。また、調査後には結果を共有してもらえると嬉しい。（KeRRA）

→承知した。結果の共有については、JICA とも相談する。（JICA チーム）

### 4. その他

- KeNHA、KURA、KeRRA については、PBC 道路と非 PBC 道路の比較調査として、IRI の計測や現地調査を再委託業者により実施する予定である。調査路線案の選定が完了している。（JICA チーム）
- Mathatani – Kaseve 道路は舗装道路であり、Kimuka – Kisamis 道路は未舗装（砂利道）である。なお、現場調査の実施に当たっては具体的な調査対象路線と調査スケジュールを MoTIHUD（チーフエンジニア）からのレターを通じて連絡すること。子のレターを受領後に、対象路線の担当者へ連絡して調査計画を最終化する。（KERRA）
- レターの作成については、チーフエンジニアと相談する。対象路線とスケジュールは事前に連絡する。（JICA チーム）
- ※打合せ後にチーフエンジニアと相談した結果、レターは作成せずに KeRRA の Director へチーフエンジニアから連絡を入れることで対応することとなった。

以上

写真



打合せ議事録（PPRA）	
打合せ	: PPRA への面談
日時	: 2021/12/3(水) 11:10-12:20
場所	: PPRA 本部、11 階会議室
参加者	: PPRA (Mr. Peter Ndung'u, Ms. Rose Ndirangu) : JICA プロジェクトチーム (辻野、小澤)
議事次第	1. 本プロジェクトの概要説明 2. 質問票の説明 3. PBC に関する議論 4. その他
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。               <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へインタビューを実施している（質問票を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。               <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・ 道路管理者用の質問票 URL を送付するので、参考として回答頂きたい。（JICA チーム）</li> </ul> <p>→質問票は道路管理者用とのことなので、いくつかの質問には回答出来るだろうが、全ての質問には回答できない可能性がある。（PPRA）</p> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ PPRA から PBC の現状・課題等について、以下の情報共有があった。</li> <li>- PBC の導入前は道路管理者が毎年メンテナンスを行うこととなっていたが、多くの道路はメンテナンス作業を行われずに劣化が放置されていた。事故や異物があった場合でも、それらを除去するのに時間がかかっていた。</li> <li>- PBC を導入する際、トレーニングは主に道路管理者側でのみ行われ、施工業者はほぼトレーニングを受けていなかった。特に調達に関してはこの点が問題の始まりであった。さらに、道路管理者が PBC の工事に独自の入札書類を使用していたため、この問題がさらに悪化した。</li> </ul>

- PBC の場合、サービスレベルを基準とするため契約に関して指示された工事（BOQ の場合）とは諸条件が異なる。
  - PBC の標準契約図書（Standard Tender Document: STD）を作成する際には、すべての道路管理機関が自分たちの入札書類を STD として使用するようにと主張した。そこで PPRA は外部コンサルタントを雇い、入札書類の利用者の立場に立った STD を作成することにした。この際、JICA プロジェクトも入札書類の調和に対して支援をした。
  - 以前は、PBC 用の STD は規則内で認められたものでは無かった。このため、困難ではあったが PPRA はロビー活動を行い、規則に盛り込んだ。その後、PPRA は PBC の STD をドラフトする作業に着手した。外部コンサルタントは、PBC の実施者と異なる見解を持っていた。これら 2 者のステークホルダー間での会議を開催し、両者が納得のいく入札文書を作成した。一般市民からのコメントも募集はしたが PPRA にはほとんどコメントが送られず、道路管理者にレターを提出してコメントをもらうことになった。その後、内容に関する検証ワークショップが実施され、外部コンサルタントは受け取ったコメントを反映させて、PBC 用の STD は正式な書類として PPRA のウェブサイトアップロードされることとなった。
  - PPRA は STD の使用に関して、全ての経理担当者にポリシーサーキュラーを発行し、STD の使用に関するフィードバックを共有するよう要請している。会議の時点では、PPRA はまだ PBC 用の STD の使用に関するフィードバックを受け取っていないが、他の STD についてはフィードバックを何件か受けている。PPRA としては、指摘されたコメントについて、入札書類を再度検討するセッションを持つ予定である。
  - PPRA は、施工業者と調達主体の両方のトレーニングに携わった。JICA プロジェクトのマスタートレーナーと TOT のコンセプトに乗っ取り、当初は PPRA のスタッフ 2 名により調達に関する PBC の研修を実施していたが、道路管理機関の調達担当者も PBC 研修の講師をするよう訓練されたことにより、PPRA スタッフの負担が軽減された。
  - また、PBC の研修コースが KIHBT により開催されたことで、研修の持続可能性も実現された。PPRA が施工業者向けの PBC 研修に講師として参加する際には、PBC の調達に関する偏見や汚職など、他の側面についても講義している。
- JICA チームは KIHBT が今後コスト積算の研修を 1 週間に拡大する予定であり、調達手順をトピックに含めることを推奨していることを PPRA に伝えた。
- PPRA には、コンプライアンス・モニタリングを扱う部署と調査部署があるが、施工業者は、順番に契約を獲得しようと他社と談合する可能性がある。このため、PPRA は入札者に、そのような談合は容易に発見され報復を受けると警告している。また、道路管理者の調達担当職員と施工業者との共謀の例もある。
  - PBC において最もおおきなリスクはサービス提供のモニタリングと支払いであろう。本来は、サービスレベルが提供されたとおりに時間や労力が費やされるべきである。ただし、PBC の施工業者が仕事をせずに 100% の支払いを受けている場合、本来はもっと少ない支払いで済むはずである。また、施工業者が設定された期間より遅れて対応した場合、支払い額は減らされるはずである。のため、発注者が即座にチェックし



ていくつかのリスクを管理する必要がある。

- これらの様な課題・リスクはあるが、PPRA は PBC が従来の年次メンテナンスよりも優れていることを認めている。
- 発注者による毎月の点検・検査に関しては、大きな道路には一人ではなくチームを作り、検査報告書に各担当者が検査結果を記入するようなシステムでサービスレベルを確認・保証する必要があるだろう。チームではエンジニアが議長を務めることが望ましい。施工業者は、評価がチームによって行われることを知れば評価の透明性が向上するためより良い仕事をするだろう。
- 施工業者の評価に関して、PBC の契約自体は法律により誰もが差別なく入札に参加することが認められており、入札者の資格要件を定めるのは道路管理者の責任である。また、過去に PBC 工事を請け負ったことのない業者が入ってこれないこととなるのではないか？もし NCA を通して少額契約の PBC のカテゴリーを設けるのであれば、PBC の研修証明書のみを要求し、PBC 工事の過去の実績は評価しない。ただし、業者が昇進するにつれて評価データを使用することを可能とする。もし業者評価の点数を使用するのであれば、それは必須要件とはなり得ないが、わずかにプラスの点数をつけることは可能であろう。
- 通常の契約では性能保証が必須である。一方、PBC では業者が履行しなかった場合、報酬は支払われないが、性能は保証されるのか？また、このような履行しない業者に対して道路管理者は制裁措置を設け、悪質な業者を退場させるべきである。なぜなら、履行しないために道路利用者が利益を得られないからである。PBC のパフォーマンスが悪い業者について、その実績不良の根本的な原因を究明する必要がある。
- 道路管理者は PPRA に報告することで、悪質業者をブラックリストに載せることができる。また、NCA は登録を抹消することで対処することが可能である。PPRA は、コンプライアンス違反の際に差し引かれた金額は、同じ契約内では使用しないべきと考える。控除額はあるレベルまでとし、それ以降は道路管理者が業者の履行保証を追及すべきである。

#### 4. その他

- ・なお、回答で得られたフィードバック（特に PBC の標準契約図書に関して）や報告書を共有頂きたい。（PPRA）
- 報告書の共有については JICA と相談する。（JICA チーム）

以上

写真



打合せ議事録（NCA）	
打合せ	: NCA への面談
日時	: 2021/12/6(月) 12:45-13:15
場所	: NCA 本部、Room of Executive Director
参加者	: NCA (Eng. Maurice Akech) : JICA プロジェクトチーム（辻野、小澤）
議事次第	1. 本プロジェクトの概要説明 2. 質問票の説明 3. PBC に関する議論 4. その他
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。                     <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へインタビューを実施している（質問票を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。                     <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・ 道路管理者用の質問票 URL を送付するので、参考として回答頂きたい。（JICA チーム）</li> </ul> <p>→質問票は道路管理者用とのことなので、いくつかの質問には回答出来るだろうが、全ての質問には回答できない可能性がある。なお、明日（12月7日）に NCA と NMS（Nairobi Metropolitan Services）とが合同でナイロビ地域の施工業者向けのセミナー（啓蒙ワークショップ）を実施予定である。この場で施工業者へ依頼することも可能である。（NCA）</p> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ NCA から PBC の現状・課題等について、以下の情報共有があった。</li> <li>- PBC の導入により、道路の耐久性や寿命を高めることが可能となった。また、今では誰もが道路の維持管理について考える様になった。この様な理由からケニアにとって、非常に良いモデルプロジェクトであったと言える。</li> <li>- レスポンス時間についても、従来の契約方式では調達などの手続きに時間がかかって</li> </ul>

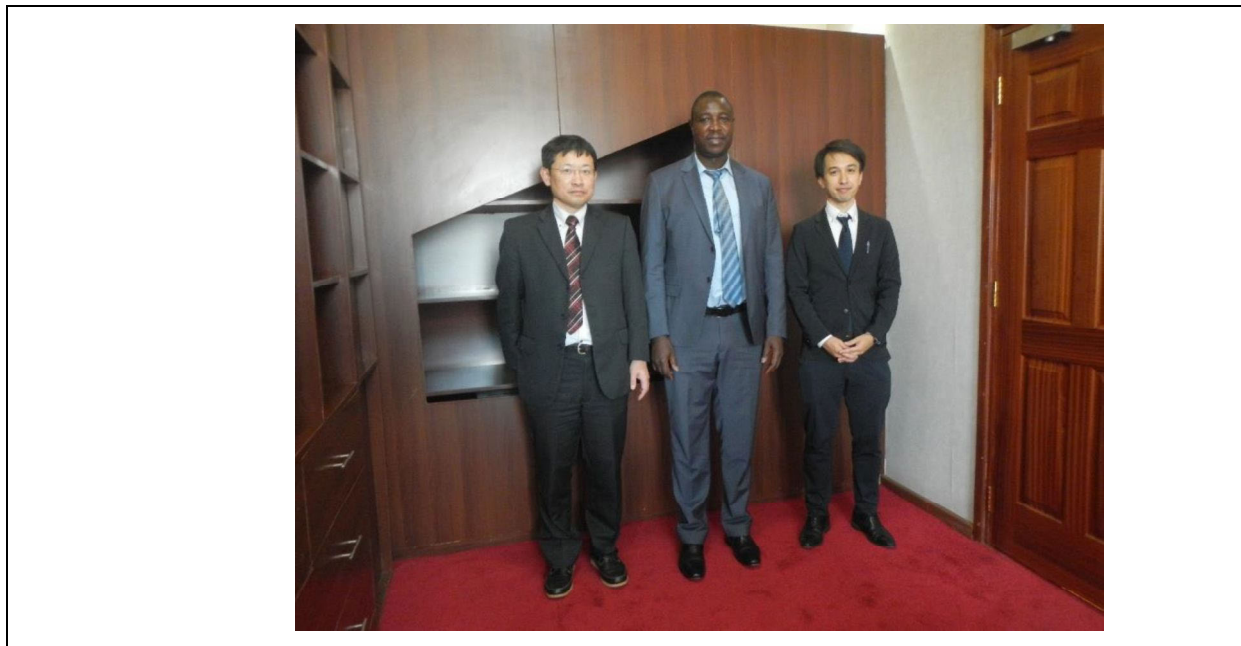
いたが、PBC では企業が常に契約下で待機しているため電話 1 本ですぐに対処できるようになり大幅に短縮された。

- 企業カテゴリーについて、PBC に特化したカテゴリー分けというのはない。カテゴリーは企業の大きさ（売上高や従業員数等）で決まるもので、各カテゴリーの中で工事種別のクラス分けがある（建築工事、土木工事、電気工事、機械工事、等）。PBC は土木工事のクラスの 1 つと考えられるが、本質的には他分野の工事でも適用が可能と考えられる。PBC の経験・技術を有しているかといった情報を追加すること等について、既に取締役会で議論を始めている。
- 業者の評価制度は現在導入されていない。先のプロジェクトで既に議論が行われコンセプトについても用意はされているため、道路管理者からの要望があれば導入は可能である。現在、世界銀行の支援でシステム改良の予算もある。業者評価の際には、健全な企業間競争が行われることが重要である。なお、悪質な企業についてはブラックリスト入りもありえる。
- 企業が NCA に登録する際には、過去の工事实績・経験や PBC の研修受講の有無等の情報を申込時に記入して、それらが NCA のデータベースに記録される。ただし、PBC 業務経験の有無は企業によっては記入されない（単に道路工事として記入）場合があるため、正確な情報が確認出来ない。本来は、各企業の情報を道路管理者間で共有できる統合的なデータベースが望ましいだろう。

以上

写真





打合せ議事録（Contractor）	
打合せ	: Contractor への面談
日時	: 2021/12/7(火) 12:15-12:50
場所	: Ebenezer Commercial Works Ltd. (Nyumba Bora Building)、会議室
参加者	: Contractor (Ms. Naomi Kairu: Chief Executive Officer) : JICA プロジェクトチーム (辻野、小澤)
議事次第	<ol style="list-style-type: none"> <li>1. 本プロジェクトの概要説明</li> <li>2. 質問票の説明</li> <li>3. PBC に関する議論</li> <li>4. その他</li> </ol>
議事内容	<p><b>1. 本プロジェクトの概要説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、資料を用いて以下について説明。 <ol style="list-style-type: none"> <li>1) 過去の JICA 道路維持管理プロジェクト（フェーズ 1～3）での PBC に関する活動と結果（PBC による管理道路の延長拡大）の概要。</li> <li>2) JICA はケニアでの PBC 導入を成功事例と捉えており、本プロジェクトでは現在のケニアにおける PBC の実態調査や関係者の評価について調査を実施する計画。</li> <li>3) 道路管理者、施工業者、道路利用者へインタビューを実施している（質問票の案を提示）。</li> </ol> </li> </ul> <p><b>2. 質問票の説明</b></p> <ul style="list-style-type: none"> <li>・ JICA プロジェクトチームから、質問票（案）の概要について以下の点を説明。 <ol style="list-style-type: none"> <li>1) 質問票は、回答者の負担軽減とサンプル数の確保を目的に Google Form にて作成しておりオンラインで回答を収集予定。</li> <li>2) 質問内容としては、①PBC のメリット・デメリット等、②PBC の導入前後の比較、③プロセス分析となっている。</li> </ol> </li> <li>・ 施工業者用の質問票 URL を送付するので、回答頂きたい。（JICA チーム）</li> <li>→質問票は既に回答済みである。一部の質問で、意味が分かりにくい質問があったため表現を変えるのが良いのでは？（Contractor）</li> <li>→回答頂き感謝する。指摘の質問表現についても分かりやすいように見直す。（JICA チーム）</li> </ul> <p><b>3. PBC に関する議論</b></p> <ul style="list-style-type: none"> <li>・ Contractor から PBC の現状・課題等について、以下の情報共有があった。</li> <li>- Ebenezer 社では 2015 年からティカ道路やサザンバイパス等で PBC 業務を受託、実施してきた。現在は 7 件以上の PBC 業務を実施しており、NCA カテゴリーは 2（上から 2 番目）である。7~8 名の技術者が PBC の研修を受講済みである。</li> <li>- 月例検査による減額は、対象道路や時期によってまちまちではあるが概ね 85%以上は受け取っている。ケニアの場合道路利用者のモラルの問題もあり、車の窓からごみ</li> </ul>

が捨てられることも多い。ただし、検査時にサービスレベルに達していなくとも一定の猶予期間（7日間）に対応すれば支払いがなされることので有難い。

- Kiambu-Limura 道路（KeNHA）では、現在ピュア PBC を実施中である。ピュア PBC は業務開始前の道路状態の確認が重要である。現地の業務担当者へ連絡すれば、当該路線の管理状況を確認可能である。また、業務で使用している機材（草刈り機等）を保管している倉庫が近くにあるため、担当者に連絡すれば見学可能である。  
→打合せ後（12月7日午後）に倉庫を見学、また翌日（12月8日）に Kiambu-Limura 道路を現地確認。
- SCU は機能しており、毎日対象道路をドライブして車上から目視で道路状況を確認している。問題が確認された場合には、担当の技術者へ連絡して雇用者により対応が行われる。対応時間については、簡単な清掃であれば数時間以内、ポットホールの修繕についても損傷確認から2日以内には対応可能である。道路を通行止めする際には、警察に依頼することで安全設備（コーン）の手配や旗振り担当者の配置が可能である（路面の施工時に直接警察へ連絡すれば、事前の許可申請等は不要）。
- PBC のメリットに関して、道路利用者としてはごみや動物の死骸が放置されていた PBC 導入前と比べると PBC 導入後の現在では道路がきれいな状態で維持されており、大きな変化を感じる。雇用の面では、3年間の継続契約であるので収入が安定しており安心して業務に従事できる。一方、通常契約（BOQ/指示業務）は9か月程度であるので会社を維持するのが大変であった。
- PBC 業務の課題としては、価格設定が上げられる。これまでの経験から PBC 業務の契約金額は本来 20,000Ksh/km/month 程度であるが、これよりも明らかに低い金額で入札に参加する業者もいる。そもそも PBC 業務をあまり理解していない業者と考えられるが、このような会社を排除する入札制度・仕組みが無いため、どうしても受注したい場合には弊社も低金額で入札せざるを得ない状況である（以前は最低制限価格を設定していたが、法律改正により現在は無くなった）。Cost Estimation Manual や Costes も、業者には現状使用されていないだろう。PBC 業務を実施した業者の評価制度や表彰等の仕組みがあると良いのではないか。

#### 4. その他

- ・ケニアでの PBC 導入時から弊社が関わったこと、そして PBC がここまで広まった JICA プロジェクトに感謝している。(Contractor)

以上

## Basic Research on Technical Cooperation of Road Maintenance Contracts (JICA)

### Meeting Memo

Meeting Agenda	Online Meeting - Kenya
Date & Time	Monday, 23 / Jan / 2023, 09:00 – 10:10 (Kenya Time)
Venue	Online
Participants	<p><u>Kenya</u></p> <p>Eng. James Kung'u, Ministry of Roads and Transport, Chief Engineer Eng. Tom Omai, KRB, Director, Policy and Research Eng. Victor Odiwuor, KRB, Deputy Director, Policy and Research Eng. Tabitha Kariuki, KRB, Assistant Engineer Eng. Thomas Bundi, KRB, Senior Statistician Eng. Caleb M. Mathuva, KRB, Graduate Engineer Mr. Brigitta K. Mulango, KRB, Intern Mr. Diana W. Muita, KRB, Intern Eng. Phires Ogoti, KIHBT, Head of Roads Department Eng. Peter Mwaniki, KURA, Nairobi Region, Regional Director Eng. JOHN KAGOCHI MWANGI, KeRRA, Deputy Director, Structures Eng. Micah Aiyabei, KWS, Roads Manager Eng. VICTOR OKANDA, Javia Kenya Limited, Engineer Eng. Evans Ochola, Transportation Engineer Dr. Kunihiro HAYASHI, JICA BMS Project, Chief Advisor Mr. James Nyaga, JICA BMS Project, Local Staff</p> <p><u>JICA</u></p> <p>Mr. Shuntaro KAWAHARA, Senior Advisor, JICA-HQ Ms. Kanako SENDA, JICA-HQ Dr. Stephen Mogere, JICA Kenya Office Ms. Nzioka, Caroline, JICA Kenya Office</p> <p><u>JICA Study Team</u></p> <p>Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Takashi NAKAJIMA (Public Work Contract) Mr. Seiji OZAWA (Road Maintenance)</p>
Theme	<p><u>Presentation on the Research Outcome</u></p> <ol style="list-style-type: none"><li>1. Opening Remark (JICA)</li><li>2. Presentation from JICA Study Team</li><li>3. Question and Answer</li><li>4. Closing Remark (Kenya)</li></ol>

#### Notes:

1. Ms. Senda started the meeting by welcoming all the participants and thanking them for attending. She then introduced the project outline and hoped to get some comments from the Kenyan side.
2. Mr. Kobayashi began the presentation on the overall output in the study.
3. Then, Mr. Nakajima followed the presentation on findings from the survey in Kenya.



## Basic Research on Technical Cooperation of Road Maintenance Contracts (JICA)

4. After two presentations, the floor was opened for question and answer.
5. Eng. Omai had two comments. Firstly, he agreed with the suggestion that the contract period of PBC contracts should be increased, as he felt that if the period was short, the benefits would not be fully realized. Secondly, he suggested that a standard or threshold should be set specifically for the Instructed Works (maybe maximum 30%) in the hybrid PBC contract, as he wanted PBC to be applied on amateur roads where there are not as many defects.
6. Eng. Bundi raised a question that whether there were any measures had been taken to ensure that the livelihoods of the local people living near these projects were improved. He added a comment that, in the presentation, he realized that the cost failure in implementing PBC is the lack of cost estimation systems, and one of the remedies is to seek donor support for these cost estimation systems.
7. Eng. Kagochi noted that the research has highlighted some areas that we need to work on to improve and ensure that PBC takes root in Kenya. He then suggested to have presentations from all the road agencies later to look at the quote actions on the areas where we are not performing well and how we are putting in place to come out so that we will see growth in the adaptation of the PBC system.
8. Eng. Mwaniki explained that roads in KURA are actually hybrid PBC because we are coming from a state where the roads were not well maintained and we are trying to bring them to a maintainable state and this will take some time due to limited resources. He added that the issue of the balance between the PBC and instructed works for Hybrid PBC which somebody has mentioned is because there is a lot of work in instructed works for the development of these roads such as drainage rehabilitation. Some contractors tend to put a lower rate than our estimate for total cost of Hybrid PBC and they will put more money into instructed works than PBC. He followed that procurement law in Kenya that does not allow to limit the contractors on how they are going to put the rates in their contract. So when the contractor does like that, the PBC element will have a very small allocation compared to the instructed works. Finally, he suggested that a brainstorming was needed to see how we could address this issue.
9. Dr. Mogere asked Mr. Nakajima if he was confident that the results of the Kenyan case would be published in such as international engineering journals. Mr. Nakajima replied to him that we were confident because the research had strong support from the road authorities. He added that the results were basically based on the actual data we have collected, including all the road conditions, the interviews and even the HDM-4 analysis.
10. Dr. Mogere also asked same question to Kenya side. Eng. Kung'u replied to him that we probably have to interact with the relevant agencies about the report, because there are only a few participants in today's meeting. He followed that then we'll be able to

## **Basic Research on Technical Cooperation of Road Maintenance Contracts (JICA)**

make more comprehensive comments, because if it's questioned outside, otherwise, only those of us who are in this meeting know the results.

11. Dr. Mogere pointed out that there was no answer for the question raised by Eng. Bundi. Then Mr. Nakajima stated that the role of the contractor and authorities has been well divided. Also, he added the size of PBC contracts in Kenya is rather small compared to other countries and that was what would support the industry in Kenya.
12. Eng. Omai stated that currently KRB normally update the cost estimation manual for Instructed Works every two years and just updated 2022-2023 version which can be found in the KRB website. He went on to say that road authorities are required to carry out a market survey of all inputs, including materials, equipment and even labour, and KRB is in the process of automating this cost estimation process. He added that perhaps the way forward now is to see how we can involve the PPRA so that we can bring this issue of engineers' cost estimates back into our tender evaluations, because that's actually a challenge of most contracts at the moment.
13. Eng. Kung'u ended the meeting by thanking for JICA Study Team and all the road agencies for the good research output. He also expressed his appreciation to JICA for the continues assistance to Kenya especially in the transport sector. He suggested to the road agencies and his colleagues that they will look at this result and get their comments or observations to answer whether this should be published.

*End*

### ラオス国関係者との協議リスト

年/月/日	時間	会議方式	先方出席者	主な議題
2021/11/30 (火)	1400 – 1500 (LST)	対面	チームリーダー (ADBプロジェクト)	PBC 実施状況聴き取り
2021/12/03 (金)	0915 – 1030 (LST)	オンライン	請負業者 (ADBプロジェクト)	PBC 実施状況聴き取り
2021/12/03 (金)	1400 – 1500 (LST)	オンライン	請負業者 (ADBプロジェクト)	PBC 実施状況聴き取り
2021/12/08 (火)	1015 – 1130 (LST)	オンライン	請負業者 (WBプロジェクト)	PBC 実施状況聴き取り
2021/12/08 (火)	1015 – 1130 (LST)	オンライン	請負業者 (WBプロジェクト)	PBC 実施状況聴き取り
2021/12/08 (火)	1500 – 1630 (LST)	オンライン	請負業者 (WBプロジェクト)	PBC 実施状況聴き取り
2021/12/08 (火)		書面	請負業者 (WBプロジェクト)	PBC 実施状況回答
2021/12/08 (火)		書面	請負業者 (WBプロジェクト)	PBC 実施状況回答
2021/12/08 (火)		書面	請負業者 (WBプロジェクト)	PBC 実施状況回答
2021/12/09 (木)	1330 – 1500 (LST)	対面	チームリーダー (WBプロジェクト)	PBC 実施状況聴き取り
2022/06/13 (月)	1330 – 1500 (LST)	対面	RAD	PBC 管理体制聴き取り

## Interview Memo

Meeting Agenda	Interview with ADB Consultant (Mr. Fukuda)
Date & Time	Tuesday, 30 / Nov / 2021 14:00 – 15:00
Venue	Project office
Participants	- ADB Consultants Mr. Masami FUKUDA (Team Leader)  - Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Saysana Keomanivong (Survey Assistant)

### 1. Questionnaires

#### 1.1 Concept Stage

##### Q1: What is BACKGROUND and PURPOSE of introducing PBC in your country?

・ これまでは、ドナーの援助で整備、リハビリした道路について、維持管理が十分でないことで、使用不能になるまで劣化が進行し、大規模な整備費・リハビリ費が無駄になる事例があった。一方、PBCによる維持管理付の整備では、持続可能な維持管理ができる点が導入の背景にあるかと考える。

##### Q2: What is ADVANTAGE of introducing PBC?

・ PBCの方法として、1) 新たに建設した道路（もしくは大規模なリハビリ）をPBCで維持管理するパターン、2) 道路寿命が残っていない10年以上前に整備した道路（中古）をPBCで管理するパターンがある。本来PBCは、1)のような管理のほうが、責任が一貫しているため、望ましい。  
・ 大規模なリハビリを実施したコントラクターが管理を実施することで、責任が一貫している点  
・ リソース（金、人）をミニマイズできる

##### Q3: What is DISADVANTAGE of introducing PBC?

・ 発注者側に維持管理のノウハウが残らない  
（上記1)の場合、建設から維持管理まで官側のノウハウがなくなっていくのではないか）

##### Q4: What is RISK of introducing PBC?

・ 同上

##### Q5: What is ADVANTAGE of introducing PBC for Contractor?

・ ビジネスチャンスの拡大（金額規模、長期的に収入が見込める点）

##### Q6: What is DISADVANTAGE of introducing PBC for Contractor?

—

##### Q4: What is RISK of introducing PBC for Contractor?

・ 維持管理の段階からスタートするPBCでは、PBC初期段階での瑕疵がわからないため、その点がリスクである。  
（道路としての寿命、路盤・路床の不良土の有無等）

## 1.2 Preparation Stage

**Q8: Did you procure the Consultant for introducing PBC?**

If yes, please share specification/TOR for the Consultant (Request data set/document 2.9)

・当コンサルタントを雇用

## 1.3 Tendering Stage

**Q9: How many standard contract types do you have? Please share standard contract (Request data set/document 2.5).**

[Example of Contract Type]

- Output & Performance Based Road Contract (OPRC):  
PBC maintenance after large scale rehabilitation
- Hybrid (Performance base and Quantity base) Contract:  
PBC maintenance without large scale rehabilitation, and spot repair work done by quantity base.
- Design Build Maintenance Operation Transfer (DBMOT):  
Rehabilitation design, rehabilitation work, PBC maintenance, Transfer to Client

・本プロジェクトでは、大規模リハビリ後に PBC メンテナンスを実施  
災害による緊急補修や上記のような既存道路に内在していたとされる瑕疵による劣化は、エンジニアと協議の上 BQ 精算にて補修ができるような建付けとなっている。

**Q10: How many surface type is adapted for PBC maintenance? Please share standard contract documents (Request data set/document 2.8).**

[Example of Contract Type: Asphalt Concrete pavement, Concrete pavement, DBST pavement, gravel road, earth road and etc.]

National Road 3 路線と Local Road 3 路線を対象としている

- ・ National Road は SDST 及び AC
- ・ Local Road は、gravel or earth road を DBST にアップグレードして管理をしている。

**Q11: Do you have any guidelines for cost estimation of PBC maintenance project (Request data set/document 2.8).**

なし

**Q12 Did you have issues regarding dissociation of project amount between expected cost and bit cost? If yes, please explain the situation?**

なし

**Q13: Is there association to discuss PBC issues (cost, qualification, training, and etc.) in your country?**

なし

## 1.4 Physical PBC Delivery Stage

**Q14 Did you have issues regarding cancellation / default of PBC maintenance project? If yes, please explain the situation?**

なし

**Q15 Did you have issues regarding risk allocation between client and contractor? If yes, please explain the situation?**

なし

**Q16 Did you have issues regarding monitoring / inspection done by contractor? If yes, please explain the situation?**

RE に要確認

**Q17 How did you check output? Please explain inspection/monitoring system on-site inspection.**

RE に要確認

**Q18 Are there any cases of administrative fault under PBC management?**

- ・ 特になし
- ・ 交通事故による故障、住民によるガードレール等の盗難は、DOR 側の対応責任（実質は、協議の上だが BQ にて対応の可能性はある）

**Q19 Did you have issues regarding reduction of payment? If yes, please explain the situation?**

RE に要確認

**Q20 Please introduce Good practice and Bad practice for PBC maintenance.**

**Q21 Do you have measures for corruption (internal regulations/rules) ?**

- ・ コンサルが間に入って業務を実施しているので、特にこのような問題はなし

## Interview Memo

Meeting Agenda	Interview with ADB (PBC Contractor(LR7615 Sekong Province and LR9001 Attapua Province)
Date & Time	Friday, 03 / Dec / 2021 09:15 – 10:30
Venue	Via remote communication
Participants	<ul style="list-style-type: none"> <li>- Road No.8 Construction Enterprise Mr. Paseuth SISOMBOUNH, Project Manager</li> <li>- Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

### **Q1: Why did you decide to participate PBC?**

- In the future, the government or MPWT will give priority to road maintenance

### **Q2: What is ADVANTAGE of PBC?**

- To save operation cost
- The management is not complicated and the work is easy
- For manpower can be used local worker for implementation and develop local worker skill.

### **Q3: What is DISADVANTAGE of PBC?**

- **For technically; the example for repairing of pothole. The potholes had been repaired will** be high capacity, but after using it for a while, there will often be cracks around those potholes, especially during the rainy season because of the existing road base was low capacity.
- If many small potholes are repaired near each other, there will be waves when the car passes by, especially the road paved surface or with DBST.
- Water stuck up on the road surface when it is raining because of many potholes had been repaired nearby each other and road surface is not smoot.

### **Q4: What is RISK of PBC?**

- Road surfaces are not smoot and traffic safety are low capacity. Accidents often occur due to the waves when driving. Should be paved with another layer for smoot surface.
- Local people in some area destroy and stealing the traffic signs, fill in the mud on the road drainage to block when it is raining, if there is any damage and repair by them self.
- The road had been maintained and repaired, but the quality is still low capacity in the future, because of increasing the traffic and community, using the heavy trucks passing.

### **Q5: What kinds of issues did you encounter on bidding stage?**

- Government had selected only low priced of Bidder, the technically and experience of Bidder are next priority.

### **Q6: What kinds of issues did you encounter on contract negotiation stage?**

- The Company profile had been qualified for participating for bid the Project and had been lowest price and was first ranking number but did not success to win the bid.

**Q7: What kinds of issues did you encounter on work implementation stage?**

- The site Inspector not inspect the work as regularly at job site, it takes a week or more for approval and making operation cost of Contractor increasing

**Q8: What kinds of issues did you encounter on payment stage?**

- The chairing Government fund had been late for payment, there is a lack of financial liquidity to be a working capital, resulting in delays in the implementation of work

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Site managers
- Site Engineers
- Foreman and Skilled workers

**Q10: How many personnel participate in the training programs annually?**

- 2 Site managers
- 3 Site Engineers
- 10 Foreman and Skilled workers

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- “Yes”
- Method for repairing of potholes with 1 time with 15 persons.
- Method for repairing of road shoulder with 1 time with 15 persons.
- Method for repairing for cleaning of drainage pipe with 2 time with 15 persons.
- And for each training including of work safety and Environment.

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- “Yes”
- Engineer skills such as know how to calculate, know how to evaluate, follow up on detailed work and summarize plans for the work to Site Manager

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- We are still interested to participate PBC project in future

**Q15 Have you experience of unreasonable request from Client?**

- Yes, we have experience of unreasonable request from Client

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				



(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)   √	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(4) Attractiveness of contract between "Pre-" and "Post-".				
a. Very Good	b. Better   √	c. Same	d. Worse a little	e. Worse terribly

(5) Technical Improvement between "Pre-" and "Post-".				
a. Increase much (+20%)   √	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(6) Risks of contract between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)   √	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
Please explain the risks of the change				
<ul style="list-style-type: none"> <li>- There is an investment risk if the inflation situation increases, most of the materials are imported from abroad such as bitumen and fuel.</li> </ul>				

## Interview Memo

Meeting Agenda	Interview with ADB PBC Contractor(NR20, Salavan Province and NR18B, Attapua Province)
Date & Time	Tuesday, 03/ Dec / 2021 14:00 – 15:00
Venue	Via remote communication
Participants	- Somxay Chalern Road-Bridge Costruction Co, Ltd. Mr. Somhack LOUNTHAPANYA, Deputy of Director  - Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Saysana Keomanivong (Survey Assistant)

**Q1: Why did you decide to participate PBC?**

We have experienced similar type of PBC project before and many of roads (18B, 11 and 20) on PBC were previously maintained by our company

**Q2: What is ADVANTAGE of PBC?**

PBC are long-term contract. As a result, it provides more sustainability for us.

**Q3: What is DISADVANTAGE of PBC?**

Not Sure

**Q4: What is RISK of PBC?**

It's the risk associated to real cause of damage on the road. For example, the damage is done by overweighed traffic. Contractors have no authority over weigh control and some damage are delayed.

**Q5: What kinds of issues did you encounter on bidding stage?**

1. Issue regarding rehabilitation quantity. During bidding stage, it was very small and we thought it was for only unit price. But when we executed contract it was certainly not enough.
2. Many bidders did not have experience on PBC contract and they had offered very low price

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

NOTHING. We had no negotiation stage

**Q7: What kinds of issues did you encounter on work implementation stage?**

1. Issue regarding rehab quantity because the condition of the road was not on service level required

**Q8: What kinds of issues did you encounter on payment stage?**

Nothing

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

1. Training about PBM contract execution
2. Additional road inspection and maintenance
3. Health and safety training

**Q10: How many personnel participate in the training programs annually?**

- 5 Engineers
- 1 Supervisor
- 20-40 for Safety and Health

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

Yes, mainly training about how to execute PBC contract. On the first year of contract 3 times per year later on for new employee. For attendance, 5-10 people.

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

Yes, our staff have improved road maintenance skill both large and small type.

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

Yes

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

Off course

**Q15 Have you experience of unreasonable request from Client?**

No

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
		√		

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
		√		

(4) Attractiveness of contract between "Pre-" and "Post-".				
a. Very Good	b. Better ✓	c. Same	d. Worse a little	e. Worse terribly

(5) Technical Improvement between "Pre-" and "Post-".				
a. Increase much (+20%) ✓	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(6) Risks of contract between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%) ✓	d. Decrease a little (-10%)	e. Decrease much (-20%)
Please explain the risks of the change (There is overload issue. Even if overload vehicles are observed and report to OPWT, contractor cannot control.)				

## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-HOU-PBC-RM-02, Houaphanh Province)
Date & Time	Tuesday, 08/ Dec / 2021 10:15 – 11:30
Venue	Via remote communication
Participants	<ul style="list-style-type: none"> <li>- Sengthong Construction Development Group Co., Ltd and Dansam Construction Co., Ltd (JV).</li> <li>- Mr. Nikone Homsombat , Director of Dansam Construction Co., Ltd</li> <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- Increase work experience

**Q2: What is ADVANTAGE of PBC?**

- The owner of the project pays regularly

**Q3: What is DISADVANTAGE of PBC?**

- No

**Q4: What is RISK of PBC?**

- No

**Q5: What kinds of issues did you encounter on bidding stage?**

- No

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- No

**Q7: What kinds of issues did you encounter on work implementation stage?**

- No

**Q8: What kinds of issues did you encounter on payment stage?**

- Provincial contributions and road funds are delayed for payment

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Technical
- Financial
- Safety
- Environmental

**Q10: How many personnel participate in the training programs annually?**

- 1 person

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- Yes

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- Yes

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting

**Q15 Have you experience of unreasonable request from Client?**

-

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)√	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)√	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%) √	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(4) Attractiveness of contract between "Pre-" and "Post-".

a. Very Good √	b. Better	c. Same	d. Worse a little	e. Worse terribly
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(5) Technical Improvement between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%) √	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(6) Risks of contract between "Pre-" and "Post-".

- Provincial contributions and road funds are delayed for payment

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%) √	d. Decrease a little (-10%)	e. Decrease much (-20%)
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Please explain the risks of the change

## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-XIE-PBC-RM-01, Xiengkhouang Province)
Date & Time	Tuesday, 08/ Dec / 2021 10:15 – 11:30
Venue	Via remote communication
Participants	<ul style="list-style-type: none"> <li>- Phonsavanh construction co., Ltd</li> <li>- Mr. Saikham Chitdapholath, Administrative Manager</li> <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- Add experience to the company

**Q2: What is ADVANTAGE of PBC?**

- Tasks are not complicated and easy to manage

**Q3: What is DISADVANTAGE of PBC?**

- It is difficult to mobilize the equipment because the road is far from each other (there are many routes in the contract)

**Q4: What is RISK of PBC?**

- No

**Q5: What kinds of issues did you encounter on bidding stage?**

- The bidding document are in English version

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- No

**Q7: What kinds of issues did you encounter on work implementation stage?**

- No

**Q8: What kinds of issues did you encounter on payment stage?**

- Late payment by Road fund and Provincial and received with percentage

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Technical
- Payment
- Safety
- Environmental

**Q10: How many personnel participate in the training programs annually?**

- 1 Engineer
- 5 Operators

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- Technical

- Payment
- Safety
- Environmental

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- Yes

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting

**Q15 Have you experience of unreasonable request from Client?**

- No

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
	√			

(4) Attractiveness of contract between "Pre-" and "Post-".				
a. Very Good	b. Better	c. Same	d. Worse a little	e. Worse terribly
	√			

(5) Technical Improvement between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(6) Risks of contract between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
		√		
Please explain the risks of the change				
- No risk				



## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-ODU-PBC-03, Udomxay Province)
Date & Time	Tuesday, 08/ Dec / 2021
Venue	No Via remote communication, only sent answer
Participants	<ul style="list-style-type: none"> <li>- Sompasong Building. Road-Bridge and Irrigation Construction Sole Co., Ltd</li> <li>- Mr. Sommai, Director</li>   <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- This is a normal job to keep employees employed all the time, not unemployed

**Q2: What is ADVANTAGE of PBC?**

- No reassessment, only monitoring and inspection

**Q3: What is DISADVANTAGE of PBC?**

- The company is responsible for the small amount of money
- The company lacks a lot of responsibility

**Q4: What is RISK of PBC?**

- The occurrence of more natural disasters than the plan caused the company to spend more than expected

**Q5: What kinds of issues did you encounter on bidding stage?**

- Low prices

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- After negotiations, the cost material is increasing but cannot be changed, causing the company to run a deficit

**Q7: What kinds of issues did you encounter on work implementation stage?**

- difficulties to resolve traffic obstacles, , because of material is far from the construction site

**Q8: What kinds of issues did you encounter on payment stage?**

- The payment is late, some years cannot be disbursed, need to postpone the payment.

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Technical work
- How to implement on the object

**Q10: How many personnel participate in the training programs annually?**

- 2 Engineers

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- Personnel are trained on the actual work in the field. work plan for each unit 4 times a year, 20 participants

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- Improved management skills to suit the work of at least 2 people to control the work, plan the work report periodically

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting

**Q15 Have you experience of unreasonable request from Client?**

- No

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)√	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)√	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)√	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(4) Attractiveness of contract between "Pre-" and "Post-".

a. Very Good	b. Better	c. Same√	d. Worse a little	e. Worse terribly
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(5) Technical Improvement between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)√	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(6) Risks of contract between "Pre-" and "Post-".

- Provincial contributions and road funds are delayed for payment

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)√	d. Decrease a little (-10%)	e. Decrease much (-20%)
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Please explain the risks of the change

- No

## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-PHO-PBC-01, Phongsaly Province)
Date & Time	Tuesday, 08/ Dec / 2021
Venue	No Via remote communication, only sent answer
Participants	<ul style="list-style-type: none"> <li>- Somboun Road and Bridge Construction Sole Co., Ltd</li> <li>- Mr. Ary Somboun, Director</li> <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- For new experience

**Q2: What is ADVANTAGE of PBC?**

- Less management  
- Less equipment

**Q3: What is DISADVANTAGE of PBC?**

- Late payment by Provincial contribution

**Q4: What is RISK of PBC?**

- Late payment, Contractor have no revolving fund

**Q5: What kinds of issues did you encounter on bidding stage?**

- Not fully understand the bidding document, because all doc in English language

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- Contractor don't need the advance payment, because contractor shall pay fee to Bank

**Q7: What kinds of issues did you encounter on work implementation stage?**

- Many routes in one contract, Contractor have to mobilize the equipment far from each other

**Q8: What kinds of issues did you encounter on payment stage?**

- The inspection is too often and documents shall be attached, and Contractor shall go to Vientiane capital for financial and limited of Provincial contribution

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Monthly payment by Consultant team and OPWT Engineer

**Q10: How many personnel participate in the training programs annually?**

- No, only Job training by OPWT Engineer

**Q11: Do you have your own training programs in relevant to PBC? If "yes", please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- No

**Q12: Did you achieve technical improvement through PBC implementation? If "yes", please explain details.**

- No

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting

**Q15 Have you experience of unreasonable request from Client?**

- The Employer shall not be limited the payment by Provincial contribution

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".				
a. Increase much (+20%) ✓	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%) ✓	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%) ✓	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(4) Attractiveness of contract between "Pre-" and "Post-".				
a. Very Good	b. Better ✓	c. Same	d. Worse a little	e. Worse terribly

(5) Technical Improvement between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%) ✓	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)

(6) Risks of contract between "Pre-" and "Post-".				
- Provincial contributions and road funds are delayed for payment				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%) ✓	d. Decrease a little (-10%)	e. Decrease much (-20%)
Please explain the risks of the change				
<ul style="list-style-type: none"> <li>- Increasing cost of material, fuel, wage of labor</li> <li>- In some route cannot access for maintain because of effected COVID-19, Contractor shall have a permission document from COVID-19 center of Province.</li> </ul>				

## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-XAY-PBC-01, Xayabouly Province)
Date & Time	Tuesday, 08/ Dec / 2021
Venue	No Via remote communication, only sent answer
Participants	<ul style="list-style-type: none"> <li>- BM Road Bridge Building and Irrigation Contraction co., Ltd</li> <li>- Director</li>   <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- Due to the project located in our area

**Q2: What is ADVANTAGE of PBC?**

- No

**Q3: What is DISADVANTAGE of PBC?**

- Late payment, not by contract condition

**Q4: What is RISK of PBC?**

- Risk in the gravel road management

**Q5: What kinds of issues did you encounter on bidding stage?**

- No

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- No

**Q7: What kinds of issues did you encounter on work implementation stage?**

- The gravel road damages in raining season and Improper performance as a PBC

**Q8: What kinds of issues did you encounter on payment stage?**

- Late payment, not by contract condition

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Training in Oudomxay Province

**Q10: How many personnel participate in the training programs annually?**

- 1 person

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- Yes

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- Yes

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting
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**Q15 Have you experience of unreasonable request from Client?**

- No
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**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".
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a. Increase much (+20%)	b. Increase a little (+10%)√	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".
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a. Increase much (+20%)√	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".
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a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%) √	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(4) Attractiveness of contract between "Pre-" and "Post-".
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a. Very Good	b. Better	c. Same	d. Worse a little√	e. Worse terribly
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(5) Technical Improvement between "Pre-" and "Post-".
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a. Increase much (+20%)	b. Increase a little (+10%)√	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(6) Risks of contract between "Pre-" and "Post-".
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- Provincial contributions and road funds are delayed for payment
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a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)√
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Please explain the risks of the change
- Road capacity was decreasing after improved and maintain because of old road.

## Interview Memo

Meeting Agenda	Interview with WB PBC Contractor CW-BOL-PBC-01, Bolikhamxay Province)
Date & Time	Tuesday, 08/ Dec / 2021 15:00 – 16:30
Venue	Via remote communication
Participants	<ul style="list-style-type: none"> <li>- Khounthavong Lao Construction Co., LTD</li> <li>- Mr. Khamkhoun, Director</li> <li>- Mr. Viengthong, Engineer</li>   <li>- Study Team (Oriental Consultants Global: OCG)</li> <li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li> <li>Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

**Q1: Why did you decide to participate PBC?**

- New technical and getting more experience

**Q2: What is ADVANTAGE of PBC?**

- The company considers PBC important
- Local traffic is good
- Local people have a better life

**Q3: What is DISADVANTAGE of PBC?**

- Construction material is far from Project
- Road base is old

**Q4: What is RISK of PBC?**

- Trucks is over load
- Narrow road width

**Q5: What kinds of issues did you encounter on bidding stage?**

- Bidding for very lowest cost -20% to 50% of estimate cost

**Q6: What kinds of issues did you encounter on contract negotiation stage?**

- No

**Q7: What kinds of issues did you encounter on work implementation stage?**

- No

**Q8: What kinds of issues did you encounter on payment stage?**

- Late payment by Road fund and Provincial and received with percentage

**Q9: What kinds of training programs in relevant to PBC did your personnel participate in?**

- Technical
- Payment
- Safety
- Environmental

**Q10: How many personnel participate in the training programs annually?**

- 5 persons

**Q11: Do you have your own training programs in relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)**

- Yes

**Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.**

- Yes

**Q13 Do you think that demarcation of duties between “the client” and “the contractor” is fair? If “no”, what unfairness should be reconsidered?**

- Fair

**Q14 Are you still interested in to participate PBC project in future? If “no”, what should be rectified?**

- Interesting

**Q15 Have you experience of unreasonable request from Client?**

- No

**Q16 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
	√			

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
	√			

(4) Attractiveness of contract between "Pre-" and "Post-".				
a. Very Good	b. Better	c. Same	d. Worse a little	e. Worse terribly
	√			

(5) Technical Improvement between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
√				

(6) Risks of contract between "Pre-" and "Post-".				
a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
		√		
Please explain the risks of the change				
- No risk				



## Interview Memo

Meeting Agenda	Interview with WB Consultant (Mr. Belal Hussain) Lao Road Sector Project 2(LRSP2)
Date & Time	Tuesday, 9 / Dec / 2021 13:30 – 15:00
Venue	RAD
Participants	- WB Consultants Mr. Belal Hussain (Team Leader)  - Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Saysana Keomanivong (Survey Assistant)

### 1. Questionnaires

#### 1.1 Concept Stage

**Q1: What is BACKGROUND and PURPOSE of introducing PBC in your country?**

- ・少ないリソース（人、金）で維持管理ができる
- ・従来の方法では、補修には、調査、積算、入札、契約、施工の手続きが必要であったが、時間の削減ができる。

**Q2: What is ADVANTAGE of introducing PBC?**

—

**Q3: What is DISADVANTAGE of introducing PBC?**

- ・業者が PBC 管理を十分に理解していない場合、十分に管理ができない。
- ・WB プロジェクトでは、WB30%、RF40%、県予算 30%で賄っているが、県予算の支払いが遅れている状況が散見される。

**Q4: What is RISK of introducing PBC?**

- ・同上

**Q5: What is ADVANTAGE of introducing PBC for Contractor?**

- ・業者の努力で、単価以上の利益を得ることができる

**Q6: What is DISADVANTAGE of introducing PBC for Contractor?**

- ・新しい方式なので、仕事の進め方がわからない点

**Q4: What is RISK of introducing PBC for Contractor?**

- ・同上

#### 1.2 Preparation Stage

**Q8: Did you procure the Consultant for introducing PBC?**

If yes, please share specification/TOR for the Consultant (Request data set/document 2.9)

- ・当コンサルタントを雇用

### 1.3 Tendering Stage

**Q9: How many standard contract types do you have? Please share standard contract (Request data set/document 2.5).**

[Example of Contract Type]

- Output & Performance Based Road Contract (OPRC):  
PBC maintenance after large scale rehabilitation
- Hybrid (Performance base and Quantity base) Contract:  
PBC maintenance without large scale rehabilitation, and spot repair work done by quantity base.
- Design Build Maintenance Operation Transfer (DBMOT):  
Rehabilitation design, rehabilitation work, PBC maintenance, Transfer to Client

—

**Q10: How many surface type is adapted for PBC maintenance? Please share standard contract documents (Request data set/document 2.8).**

[Example of Contract Type: Asphalt Concrete pavement, Concrete pavement, DBST pavement, gravel road, earth road and etc.]

—

**Q11: Do you have any guidelines for cost estimation of PBC maintenance project (Request data set/document 2.8).**

なし

**Q12 Did you have issues regarding dissociation of project amount between expected cost and bit cost? If yes, please explain the situation?**

・概ね予定金額の 10~20%程度低い入札金額で問題ない

**Q13: Is there association to discuss PBC issues (cost, qualification, training, and etc.) in your country?**

なし

### 1.4 Physical PBC Delivery Stage

**Q14 Did you have issues regarding cancellation / default of PBC maintenance project? If yes, please explain the situation?**

・一度 200%の入札があり、再入札を行った事例はある。

**Q15 Did you have issues regarding risk allocation between client and contractor? If yes, please explain the situation?**

なし

**Q16 Did you have issues regarding monitoring / inspection done by contractor? If yes, please explain the situation?**

なし

**Q17 How did you check output? Please explain inspection/monitoring system on-site inspection.**

・ OPWT, DPWT が業者の作成した週報、月報を確認し、サンプル調査を実施

**Q18 Are there any cases of administrative fault under PBC management?**

・ 特になし

**Q19 Did you have issues regarding reduction of payment? If yes, please explain the situation?**

・ 減額計算を実施した事例はない

**Q20 Please introduce Good practice and Bad practice for PBC maintenance.**

・適用段階では特になし
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**Q21 Do you have measures for corruption (internal regulations/rules) ?**

・特にこのような問題はなし
---------------

**Q22: Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Maintenance cost for the SAME roads between "Pre-" and "Post-".
---

・ 具体の数値は言及できないが、下がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

(2) Workload of administration works between "Pre-" and "Post-".
--

・ 具体の数値は言及できないが、下がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

Please explain the activity of the change
---

(3) Workload of fieldworks between "Pre-" and "Post-".
--

・ 具体の数値は言及できないが、下がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

Please explain the activity of the change
---

(4) Service level of subjected roads and other facilities between "Pre-" and "Post-".
---

・ 具体の数値は言及できないが、上がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

(5) Condition of road reserve management (e.g. road closure period, illegal ROW occupation, etc) between "Pre-" and "Post-".
--

・ 具体の数値は言及できないが、上がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

(6) Numbers of complaints from road users between "Pre-" and "Post-".
---

・ 具体の数値は言及できないが、下がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

(7) Numbers of good reputation from road user road users between "Pre-" and "Post-".
--

・ 具体の数値は言及できないが、上がっている
------------------------

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
----------------------------	--------------------------------	----------------	--------------------------------	----------------------------

## Interview Memo

Meeting Agenda	Interview with Road Administration Division (RAD)
Date & Time	Mon, 13 / Jun / 2022 13:30 – 15:00
Venue	RAD
Participants	<ul style="list-style-type: none"> <li>- RAD Mr. Lamphoung</li> <li>- Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Saysana Keomanivong (Survey Assistant)</li> </ul>

1. Background of applying PBC(not conventional maintenance)
  - ・これまでの数量ベースの維持管理では、予算が高くなるのみではなくルーチンメンテをケアできないため、PBC 契約に移行することにした。
  - ・国道の維持管理に係る費用は、数量ベースでの維持管理では 460billion kip/year であるが、PBC では、380billion kip/year 程度と見積もっている。
2. How much budget allocated from road fund
  - ・今回国道 7300 km の内、プロジェクト実施中の箇所を除いた 6800 km を対象に PBC 発注を進めている。
  - ・対象道路は、AC、セメントコンクリート、DBST、砂利道である。
  - ・今年の予算は 700billion kip で、80% が国道、20% でローカル道路に充てる。80% の国道分の、さらにその 30% をこれまでのプロジェクトの負債の支払いにあてる。
  - ・PBC は、2022 年から 3 年間で予算は 1000billion kip/3 year。2022 年の予算は 380billion kip/year。
3. Official title of the contract
  - ・後日送付
4. Responsible department
  - ・DOR：北（2～3 スタッフ）、中央（2～3 スタッフ）、南（2～3 スタッフ）が地域マネージャーとして各地域を管理
  - DPWT：PM
  - OPWT：プロジェクトメンバー
  - ・合計 109 契約の PBC を実施
  - ・合計 18 プロビンス（DPWT）あり、1 プロビンス当たり 7～8 契約を扱う。
5. When will the contract start?
  - ・現在入札評価を行い、承認待ちの状態。2022.6 現在すぐにでも始める予定（事前に簡単なメンテは実施している）。
  - ・予算の基準としては、
    - DBST 27million kip/km-year
    - AC 22 million kip/km-year
    - Gravel 100 USD /km-month, 12million kip/km-year
  - ・Emergency 費用は契約金額の 5%
  - ・対象の道路を Core1,2,3 と分けて、Core1 は、Asian road を対象で、延長も 90 km 程度、Core2 は国道を対象で、30 km 程度の契約延長、Core3 はいくつかランクの低い国道を対象。
6. How many contract will you sign per year?
  - ・上記

7. Contents of the tender document (Do you have an English version?)
  - ・基本的に WB プロジェクトをベースに多少改良しているのみ。具体には、橋梁の支承周りの清掃など。
8. Contents of the contract document (Do you have an English version?)
  - ・上記
9. Did you refer any sample documents such as World Bank and/or ADB for development of this contract?
  - ・上記
10. Target contractors (local or international?)
  - ・ローカル業者を対象としている。維持管理経験等を入札要件としている。
11. Is initial rehabilitation work implemented prior to PBC phase?
  - ・実施する。
12. Contract period
  - Initial rehabilitation: 半年程度
  - PBC: 3年
  - 良い状態の部分は P B C を始めて、リハビリの部分はサービスレベルの要求はしない。ただし、清掃等のリハビリに関係ない部分は、P B C 実施する。
13. Do you employ the consultant for the project management?
  - ・雇わない。
14. Did you conduct PBC training for contractor?
  - ・ Pre bid meeting にて、P B C に必要な研修をすべて実施する。
  - ・官側も、D P W T の P M にしっかり研修を行い、P M が O P W T 等を指導する形で実施する
15. Inspection system? Who confirm defect / repairmen and payment reduction?
  - ・上記
16. Average road length per contract (km)
  - ・上記
17. Average contract amount per contract
  - ・基準の額は上記。

<Weight station>

Now DOR have plan to install modernized weight station. The location of it and current progress.

- ・全国で7カ所に最新の計量機器を導入する計画としている。

### フィリピン国関係者との協議リスト

年/月/日	時間	会議方式	先方出席者	主な議題
2022/03/10 (木)	1500 – 1630 (PST)	対面	RMC2-UPMO	PBC 管理体制聴き取り
2022/03/11 (金)	0900 – 1100 (PST)	対面	RMC2-UPMO	PBC 管理状況聴き取り
2022/03/11 (金)	1330 – 1500 (PST)	対面	BOM	PBC 管理状況聴き取り
		書面	請負業者	PBC 実施状況回答
		書面	RMC1(B)-UPMO	PBC 管理状況回答
		書面	請負業者 (PBM-4)	PBC 実施状況回答
		書面	RMC2-UPMO	PBC 管理状況回答
2023/01/25 (水)	1300 – 1400 (JST)	オンライン	DPWH	調査成果発表

## Interview Memo

Meeting Agenda	Interview with RMC2-UPMO
Date & Time	Thursday, 10 / March / 2022 15:00 – 16:30
Venue	Meeting room (RMC-2)
Participants	<ul style="list-style-type: none"><li>- RMC-2</li><li>Dir. Sharif Madsmo Hasin</li><li>PM Emmanuel M. Supe</li><li>PM Marlon Galerio</li><li>PM Ernante Antonio</li><li>PM Evangeline Carabal (Cel.# 09272765128)</li><li>Nancy C. Mari (Cel.# 09277364454)</li><li>Daryll Pelayo (Cel.# 09190013574)</li><li>Minie Joy Adarne (Cel.# 09684388975)</li><li>Bryna Nolleth Lazaro (Cel.# 09274775073)</li> <li>- Study Team (Oriental Consultants Global: OCG)</li><li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li><li>Mr. Giles J. Miranda (Survey Assistant)</li></ul>

### ■研修について

- 入札前に2回、メンテ実施中に1回行った。前者は業者に対して、PBCの概要や管理方法について説明を行う内容である。ただ、技術者ではなく、管理者側の人材が来ていたので、内容が十分に理解されていなかった印象を受けている。
- DPHW側としても、十分理解できていなかったため、資料を読み込んで現場で学習しながらの対応となった。
- 見積もり方法についてのガイドライン等は整備されていないが、フィリピンではBOMがEquivalent Maintenance Kilometer(EMK)を整備していて、その値よりもPBCの単価は低かった。

### ■緊急対応について

- 台風の時は、管理延長前線の不具合が起きて、順に対応するしかなかったため、残りの部分の対応が遅れる実態があった。これは、入札時に業者が十分に理解していないために、十分な管理体制を整備できなかったことも理由として挙げられる。

### ■業者にとってのメリットは？

- 業者の経験は、これまで建設・補修工事のみであったため、道路管理者としての能力向上が期待できる。仮に次のプロジェクトがある場合、今回経験した業者が引退していることも考えられるので、引き続きキャパビルが必要と考える。

### ■業者にとってのデメリットは？

- 研修が十分でないので、良いパフォーマンスが出来ていないことにつながっている。これが、減額計算につながってしまう。
- 実施段階で路盤・路床等の劣化や地盤沈下・ランドスライド等の影響により劣化が生じる箇所があった。この場合は、業者の責任ではないのでPBC対象外にする必要があった。

Area of special treatment(AOST)対象とする。そのため、PBC 適用には詳細の調査が必要である。

■業者にとってのリスクは？

- 延長が長いと十分に管理できないことからリスクと考えられる。これは入札の段階で、十分に PBC 中身を理解していなかったことから、十分な体制を構築出来ていなかったと考えられる。

■PBC 概要について

- 初期のリハビリを 18 カ月で実施しつつ、平行して PBC 管理を実施している。
- 初期状態が悪いかつ初期リハビリ前の区間に対しても PBC メンテが必要？その部分のメンテは PBC 単価に含まれる？
- 含まれる。この方式でも得に業者からのクレームはなかった。
- 緊急対応の作業については、PBC 外の契約で、プロビジョナルサムにて事象毎に補修作業を指示し、数量ベースで精算を行う。
- 月間点検 (monthly inspection, monthly validation) では、業者、コンサル、district office、regional office、HQ の 4 者 (5 者) で実施する。また、別途アドホック的に daily check を行い、問題箇所があったら、業者に連絡をする形としている。

■サービスレベルの維持について

- 従来方式の補修では配分予算によるため、適切な維持管理ができない年もある。PBC では一定期間予算を確保できるという観点でも安定してよい状態を保つことができる。

■道路管理に対してのクレーム数

- PBC 下では、特に利用者から広く意見を集める体制を強化しているので、数としては増えている。ただ、この意見からすぐに対応する体制をとっているため、よりよい管理が出来ている印象がある。



## Interview Memo

Meeting Agenda	Interview with RMC2-UPMO
Date & Time	Friday, 11 / March / 2022 9:00 – 11:00
Venue	Meeting room (RMC-2)
Participants	<ul style="list-style-type: none"><li>- RMC-2</li><li>Dir. Sharif Madsmo Hasin</li><li>PM Emmanuel M. Supe</li><li>PM Marlon Galerio</li><li>PM Ernante Antonio</li><li>PM Evangeline Carabal (Cel.# 09272765128)</li><li>Nancy C. Mari (Cel.# 09277364454)</li><li>Daryll Pelayo (Cel.# 09190013574)</li><li>Minie Joy Adarne (Cel.# 09684388975)</li><li>Bryna Nolleth Lazaro (Cel.# 09274775073)</li> <li>- Study Team (Oriental Consultants Global: OCG)</li><li>Mr. Makoto NOZAWA (Deputy Chief Consultant)</li><li>Mr. Giles J. Miranda (Survey Assistant)</li></ul>

### ■PBCの留意点について

- 災害や洪水が発生する部分は、PBCの範囲外の対応が増えてくる。Provisional Sumは、プロジェクト費の3%程度しか見込んでいないので、この部分の対応が不可能である。そのため、ルート選定の際には、このような問題がない区間か注意して選定しなければならない。
- DD段階で詳細の調査を行い、路床・路盤の悪い部分が残らない調査が必要である。
- また、都市部は交通量が非常に多いため、メンテ時の交通管理が重要になるため、PBCを適用して、この部分をコントラクターに担わせるのは適切ではないと考える。
- 瑕疵期間（DPL）について、PBC全体の契約終了時か初期リハビリの終了時から対象になるのかを明確にすべき。
- 初期リハビリ及びPBCを実施するにあたって、以下の内容は十分検討する必要がある
  - ー地すべり、沈下、洪水等が発生する箇所は、PBC外の補修が多くなるため
  - ー路床・路盤に不良土が残っている場合は、公正なPBC管理ができないため、詳細調査を行い、初期リハビリ時に置き換えを実施。

### ■PBC概要

- 本プロジェクトは2013～2018年にWBファンドで実施された。数量ベースで実施する初期リハビリとPBC管理のハイブリット方式である。
- PBCは初期リハビリ開始時と同時にスタートする必要があるが、リハビリが終わっていない区間に対しても、PBCが適用される。  
(RMC-1では、この区間は、ペナルティの対象外との言及あり)
- RMC-1のプロジェクトは、全線オーバーレイに対して、RMC-2のプロジェクトは、部分的なリハビリのみでPBCをスタートした。

■維持管理予算について

- 予算は十分ではないというのが現状ではあるが、自国予算でも PBC を適用するのが良いと考える。

■PBC のメリットは

- 作業負荷を業者に移すことができる
- 予備費・Provisional Sum は、プロジェクト費の 3%を確保していたが、緊急対応の費用として足りなかった。
- DOM は、EMK を算出しているが、これはすべての活動は含まれていないので比較の際注意が必要。

■コントラクターにとってのメリットは

- コントラクターが長期的にリハビリのタイミング等をコントロールできる。

■コントラクターにとってのデメリットは

- 経験が足りないため、PBC 管理のユニットコストの金額の予測が難しい

■研修について

- 研修は事前には実施されなかった。メンテ開始後に 2 回研修を実施したが、基本は入札図書に記載している内容を理解して、実施することが基本である。

## Interview Memo

Meeting Agenda	Interview with BOM
Date & Time	Friday, 11 / March / 2022 13:30 – 15:00
Venue	Meeting room (BOM)
Participants	<ul style="list-style-type: none"><li>- BUREAU OF MAINTENANCE (BOM) Project Director Ernesto S. Gregorio OIC Asst. Dir. Teofila Borlongan Engr. Leo Odrozo Engr. Edgardo Cuenco Engr. Eleonor Quilang</li> <li>- Study Team (Oriental Consultants Global: OCG) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Giles J. Miranda (Survey Assistant)</li></ul>

### ■維持管理について

- 維持管理の予算は Routine maintenance と Periodic maintenance があり、Planning service が配分予算を決定する。
- BOM のメンテ責任範囲は、Routine maintenance のみで、Regional Office-Maintenance division が自前で機材を保有し、メンテを実施している。
- Periodic maintenance は、Regional Office-Planning division が実施する。
- Routine maintenance の内容は、Department Order(DO) No41 に示されている。DO41 では、Response Time も規定されている。
- Routine maintenance の予算は、2018 年度までは、ほぼ申請額の予算が配分されていたが、2022 年度は申請額 164 億円に対して 24.9 億円（15%程度）しか配分されなかった。
- Equivalent Maintenance Kilometer(EMK)を採用している。

### ■PBCについて

- BOM は inspection に参加することで、PBC 案件に係っている。
- WB の PBC 案件では、状態の良い区間はコントラクトから除外されたため、PBC 契約が終了した 5 年後には、劣化が酷くなってしまった。そのため、良い状態でも PBC 管理をすべきであると考える。

## The Questionnaire for the Contractor(s) in Philippines

### Q1: Why did you decide to participate PBC?

This Contract involves lot of Item of Works particularly in roadworks, thus, we shall be able to familiarize and enhance our experience, technical knowledge and skills in the implementation of these works plus an additional credential to our company since only few contractors in the Philippines were given the chance to join in this type pf contract.

### Q2: What are the ADVANTAGES of PBC?

The scope of work is mainly upgrading, rehab and maintenance of existing road and all its associated structures and sub-structures thus, thorough design is not necessary.

### Q3: What are the DISADVANTAGES of PBC?

Dealing with the Local Authorities and length of project coverage.

### Q4: What are the RISKS of PBC?

The Risk is more on the involvement of Local Government Units due to complaints of damaged properties for road right of Way being negotiated and delayed removal of centennial trees along the RROW including the overlapping of works with local contractors under DPWH Regional and Disctrict offices.

### Q5: What kinds of issues did you encounter on bidding stage?

English Proficiency Certificate is difficult to acquire.

### Q6: What kinds of issues did you encounter on contract negotiation stage?

Percentage of Foreign Currency.

### Q7: What kinds of issues did you encounter on work implementation stage?

- a). Source of qualified aggregates not available within the province. Contractor spent more money in hauling of aggregates located in the nearby province with an average hauling distance of 130km.
- b). Interference from Local Authorities due to environmental Impact of waste disposal.
- c) Road safety Implementation as there are more complaints from LGU's and motorist.

### Q8: What kinds of issues did you encounter on payment stage?

Preparation/compiling of back-up documents particularly Materials Report due to huge amount of accomplishment involving several item of works.

### Q9: What kinds of training programs relevant to PBC did your personnel participate in?

- a). Seminar on the implementation of Maintenance Works including application/calculation of Monthly Penalty Calculation conducted by the Consultant.

### Q10: How many personnel participate in the training programs annually?

Three (3)

### Q11: Do you have your own training programs in relevant to PBC? If "yes", please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)

None

### Q12: Did you achieve technical improvement through PBC implementation? If "yes", please explain details.

Yes, as we learned the time frame cycle/sequence in the implementation of maintenance activities including proper and effective procedures to prolong the usability of any repaired/maintained road section

**Q13 Do you think that demarcation of duties between "the client" and "the contractor" is fair? If "no", what unfairness should be reconsidered?**

Yes
-----

**Q14 Are you still interested in to participate PBC project in future? If "no", what should be rectified?**

Yes
-----

**Q15 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Job opportunity between "Pre-" and "Post-".				
<input checked="" type="radio"/> a. Increase much (+20%)	<input type="radio"/> b. Increase a little (+10%)	<input type="radio"/> c. same (+-0%)	<input type="radio"/> d. Decrease a little (-10%)	<input type="radio"/> e. Decrease much (-20%)

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".				
<input type="radio"/> a. Increase much (+20%)	<input checked="" type="radio"/> b. Increase a little (+10%)	<input type="radio"/> c. same (+-0%)	<input type="radio"/> d. Decrease a little (-10%)	<input type="radio"/> e. Decrease much (-20%)

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".				
<input type="radio"/> a. Increase much (+20%)	<input type="radio"/> b. Increase a little (+10%)	<input checked="" type="radio"/> c. same (+-0%)	<input type="radio"/> d. Decrease a little (-10%)	<input type="radio"/> e. Decrease much (-20%)

(4) Attractiveness of contract between "Pre-" and "Post-".				
<input type="radio"/> a. Very Good	<input checked="" type="radio"/> b. Better	<input type="radio"/> c. Same	<input type="radio"/> d. Worse a little	<input type="radio"/> e. Worse terribly

(5) Technical Improvement between "Pre-" and "Post-".				
<input type="radio"/> a. Increase much (+20%)	<input checked="" type="radio"/> b. Increase a little (+10%)	<input type="radio"/> c. same (+-0%)	<input type="radio"/> d. Decrease a little (-10%)	<input type="radio"/> e. Decrease much (-20%)

(6) Risks of contract between "Pre-" and "Post-".				
<input type="radio"/> a. Increase much (+20%)	<input checked="" type="radio"/> b. Increase a little (+10%)	<input type="radio"/> c. same (+-0%)	<input type="radio"/> d. Decrease a little (-10%)	<input type="radio"/> e. Decrease much (-20%)
Please explain the risks of the change				

Thank you very much for your great cooperation!!



Republic of the Philippines  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
**CENTRAL OFFICE**  
Manila

February 18, 2022

**Mr. ALLEN M. QUIAMBAO**  
Road Manager  
Kyeryong-Policarpio (JV)  
544 Melania St., Samsonville Subd.,  
Dau, Mabalacat,  
Pampanga

**SUBJECT : Request for Cooperation with JICA to Undertake Basic Research on Performance-Based Road Maintenance Contracts under the Road Upgrading and Preservation Project with Loan Agreement No. PH-P247**

Sir,

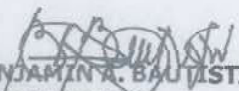
Forwarded herewith is the memorandum dated 03 January 2022 from Undersecretary Emil K. Sadain, UPMD Operations and Chief Implementer of BBB Program, relative to the above-mentioned subject.

In connection thereto, we would like to officially request your office to provide assistance in answering the attached questionnaire and supplying other requested information relevant to the conduct of said study.

In view thereof, JICA is requesting that the duly accomplished survey questionnaire be submitted by February 25, 2022. Thereupon, kindly forward your response via **e-mail** on **February 24, 2022** so we can collate and forward the same to JICA.

Our staff, Project Manager Antonio Erwin R. Aranaz and Engr. Rod Michael L. Dacanay, will be coordinating with you regarding this matter, and can be contacted through [aranaz.antonio\\_erwin@dph.gov.ph](mailto:aranaz.antonio_erwin@dph.gov.ph) and [roddacanay.ust.eng@gmail.com](mailto:roddacanay.ust.eng@gmail.com) respectively.

Very truly yours,

  
**BENJAMIN A. BAUTISTA**  
Project Director  
RM/C1(B) - UPMD

19.1 RMD/AERA/RCM

### The Questionnaire for the Contractor(s) in Philippines

Q1: Why did you decide to participate PBC?

Since it is a good type of project where it is a combination of road rehabilitation and preventive maintenance

Q2: What are the ADVANTAGES of PBC?

Repair and rehabilitation of existing roads is identified by the contractor and maintenance will be done by the same contractor

Q3: What are the DISADVANTAGES of PBC?

Delay is being incurred because of overlapping of work by Regional DPWH which is done simultaneously

Q4: What are the RISKS of PBC?

Completed works by the contractor is damaged by DPWH Regl contractor resulting to rework and incur additional cost.

Q5: What kinds of issues did you encounter on bidding stage?

Q6: What kinds of issues did you encounter on contract negotiation stage?

Q7: What kinds of issues did you encounter on work implementation stage?

complaints from motorist due to traffic and coordination with LGU and District Engineering office of DPWH

Q8: What kinds of issues did you encounter on payment stage?

Delay/late payments of progress billings

Q9: What kinds of training programs relevant to PBC did your personnel participate in?

Environmental and Health safety.

Q10: How many personnel participate in the training programs annually?

6

Q11: Do you have your own training programs in relevant to PBC? If "yes", please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)

None

Q12: Did you achieve technical improvement through PBC implementation? If "yes", please explain details.

Yes, good/proper repair & rehabilitation of work which results to minimal maintenance cost.

Q13 Do you think that demarcation of duties between "the client" and "the contractor" is fair? If "no", what unfairness should be reconsidered?

Yes

Q14 Are you still interested in to participate PBC project in future? If "no", what should be rectified?

Yes

Q15 Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"

(1) Job opportunity between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
✓				

(2) Contract amount for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
			✓	

(3) Profitability for the same road length and the contract period between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
	✓			

(4) Attractiveness of contract between "Pre-" and "Post-".

a. Very Good	b. Better	c. Same	d. Worse a little	e. Worse terribly
	✓			

(5) Technical Improvement between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
✓				

(6) Risks of contract between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
			✓	

Please explain the risks of the change

Thank you very much for your great cooperation!!



**Q1:**

**BACKGROUND:**

In the Philippines, road transportation is the most substantial mode of transportation which comprises about 90% of passenger transport and about 50% of freight transport. Due to the country's prioritization of expansion of road network to enhancement and maintenance of existing roads, some roads were left unpaved; thus, these unpaved roads prove to be wholly ineffective. Furthermore, as the road operation and maintenance structure is weak which left the overall road condition poor, it is important to enhance road maintenance capacity of Department of Public Works and Highways (DPWH). In addition, it is also important to enhance transportation capability and efficiency, and ensure sustainability of roads through improvement and maintenance of arterial national roads across the Philippines; hence, in 2009, Japan International Cooperation Agency (JICA) under the Road Enhancement and Asset Preservation Program (REAPMC), LTPBMC has been developed. LTPBMC is a new Performance-Based Contracting Methodology that will encompass the whole asset management. Moreover, it is otherwise known as Design, Build, Operate, Maintain, and Transfer (DBOMT). Thereby, this program contributes to the improvement of socio-economic development of the country.

**PURPOSE:**

The purpose of PBC is to assure road durability as well as to satisfy road user services and comfort measured against performance indicator threshold in terms of vegetation control, road feature conditions (cross fall), pavement condition (pothole, rutting and cracks), pavement surface roughness (IRI), drainage off the pavement (condition) and road signs and markings visibility and define response time to rectify defects that compromise the usability of the road and safety of road users. Mainly, its purpose is to increase the efficiency and effectiveness of road maintenance operation providing more convenience and safety to road users.

**Q2:**

**ADVANTAGES:**

As Performance-Based Road Maintenance Contract ensures adequate long-term maintenance funding, it renders a range of advantages. It reduces the need for road rehabilitation as consistent and professional road maintenance application prevents rapid collapse into road disrepair or deterioration. It also improves the control and enforcement of performance levels, the quality of work, and above all road safety. Furthermore, it provides safeguard against cost overruns from frequent claims and contract amendments to increase quantities of work, and better transparency and accountability which also facilitates easier audits. Lastly, through PBC, Operational Service levels are set and identified for the contractor to achieve, otherwise, fixed monthly payment will be reduced thru penalties if service levels are not attained or achieved.

**Q3:**

**DISADVANTAGES:**

There are no tangible and visible disadvantages of introducing PBC in the Philippines; however, there were some challenges that occurred during the implementation stage since this is new.

**Q4:**

**RISKS:**

The discerned risks regarding the introduction of PBC are the readiness or preparedness of the implementing unit namely, the consultants and contractors, and the implementing agency. Relative to private contractors, performance standards may be unable to be met due to unfamiliarity of PBC requirements as some contractors are not used to the fundamental element of PBC. Both of these can limit the success of PBC. Thus, contractors need trainings and capacity building to address these challenges.

**The Questionnaire for  
The Contractor(s) in Philippines**

**PBM-4 Project  
Surigao-Davao Road**

Q1: Why did you decide to participate PBC?

We decided to participate in PBC project to accept new experience, for this will be our very first time to have this kind of contract. Furthermore, we do believe that we were already equipped in our experience as a contractor and have enough resources to comply on the requirements including the advantage of the location of the project which is situated within our province & our neighbouring province.

Q2: What are the ADVANTAGES of PBC?

The advantages would be the chance to gain new experience and knowledge on this kind of project and apply it for our development.

Q3: What are the DISADVANTAGES of PBC?

The disadvantage is the understanding of the given parameters for the inspection stage (on LTPBM Inspection) to the actual site condition and circumstance.

Q4: What are the RISKS of PBC?

The risks are the responsibility affiliated on our possession of site e.g. external accidents and natural disasters.

Q5: What kinds of issues did you encounter on bidding stage?

There were no problem encountered on the bidding stage.

Q6: What kinds of issues did you encounter on contract negotiation stage?

There were no problem encountered.

Q7: What kinds of issues did you encounter on work implementation stage?

- Bad weather condition that greatly affected our work schedule.
- Overlapping of Stationing to DPWH District & Regional Projects.

Q8: What kinds of issues did you encounter on payment stage?

Since this is our first time to participate in PBC project funded by foreign, payment stage was not that easy wherein there are so many requirements to comply unlike the usual. But as it progresses, we were able to be equipped to understand and comply it on time, specifically the monthly Materials Report and LTPBM that has so many attachments.

Q9: What kinds of training programs relevant to PBC did your personnel participate in?

- OSHE Summit
- PICE

Q10: How many personnel participate in the training programs annually?

Q11: Do you have your own training programs relevant to PBC? If “yes”, please explain contents of the programs (topics, outlines, frequency, number of attendance and etc.)

Q12: Did you achieve technical improvement through PBC implementation? If “yes”, please explain details.

Yes, about new relevant learnings through exchanging of ideas with the Implementing Office and Consultancy about the project implementation.

**The Questionnaire for  
Department of Public Works & Highways, Philippines**

**1. Questionnaires**

**Q1: What is the BACKGROUND and PURPOSE of introducing PBC in your country?**

Background:

The portion of a road network is in need of rehabilitation and maintenance in order to lessen the travel time of the motorists as well as the travelling public.

Purpose:

To ensure an effective and efficient road maintenance resulting to have a good and smooth riding surface of the road in order to expedite the delivery of goods and services. The Level of Service (LOS) or threshold required to be maintained by the Contractor is IRI of 3 (maximum).

**Q2: What are the ADVANTAGES of introducing PBC?**

Advantages of PBC:

A. Regular project inspection is to be conducted by the Implementing Office in charge together with the Contractor and other offices concerned.

B. Regular maintenance is to be implemented by the contractor based on the findings of the inspectorate team.

C. Monthly project inspection is to be conducted by different offices concerned based on D.O. 164 series of 2016 such as: DEOs, ROs, BOM, Consultant and IO.

D. The Contractor is closely coordinating with LGUs concerned traversing the project for immediate response incase there is an obstruction along the carriageway that may be encountered especially during calamities, etc.

**Q3: What are the DISADVANTAGES of introducing PBC?**

Disadvantages of PBC:

A. The cost of maintenance in the PBC per kilometer or EMK is higher compared to the usual budget of DEO.

B. The maintenance of the road section is not effective if the base or foundation of the road section is not stable resulting to fast deterioration of the finished pavement.

C. If the thickness of the existing PCCP is not sufficient to carry the load of the present situation that many heavy vehicles passing along the national road, it will result to road defects /damage.

**Q4: What are the RISKS of introducing PBC?**

The following are the possible risks in introducing PBC to DWPH:

A. The quantification and costing of maintenance works along the mountainous sections is very difficult to estimate for the of future damage that may incur during landslide, earthquake, strong typhoons, etc.

B. If the location of the project for maintenance is in the remote areas and peace and order problem will be encountered then the project will not be successful.

C. Effects of climate change will incur future damage to proposed projects.

**Q5: Comparison of Road Maintenance Status between "Pre-PBC" and "Post-PBC"**

(1) Maintenance cost for the SAME roads between "Pre-" and "Post-".

The RMC II - UPMO had implemented the LTPBM Contract for five (5) years duration and after completion, the project were properly turned-over to DEOs concerned for continuous maintenance. The RMC II did not implement the "Pre-PBC" and "Post-PBC" and therefore comparison of road maintenance cost has no data to compare.

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(2) Workload of administration works between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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Please explain the activity of the change.

(3) Workload of fieldworks between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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Please explain the activity of the change.

(4) Service of subjected roads and other facilities between "Pre-" and "Post-"

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(5) Condition of road reserve management (e.g. road closure period, illegal ROW occupation, etc.) between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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(6) Numbers of complaints from road users between "Pre-" and "Post-".

a. Increase much (+20%)	b. Increase a little (+10%)	c. same (+-0%)	d. Decrease a little (-10%)	e. Decrease much (-20%)
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## **ANSWERS TO THE QUESTIONNAIRES OF JICA TO UNDERTAKE BASIC RESEARCH ON PERFORMANCE BASED ROAD MAINTENANCE (PBRM) CONTRACTS**

What is the background and purpose of introducing PBRM Contract in your country?

The Performance Based Maintenance was first introduced in the Philippines in 2003 under NRIMP I with 3 packages, 2 in Manila South Road and one in Pagsanjan-Lucena Road and Famy Infanta Road in the Provinces Quezon and Laguna all in Region 4A. And later on followed by 4 packages under NRIMP 2 . Namely Manila North Road, Manila South Road, Calapan South Road and Caticlan- Calibo Road in 2013. In my own honest opinion PBRM is introduced in our country in order to compare with the conventional using the quality and quantity based maintenance as against the performance based maintenance in maintaining our national roads and bridges.

What are the advantages of introducing PBRM Contract?

In the year 2012 the Department of Public Works and Highways implemented Rationalization Plan. Large number of maintenance workforce in the District Regional Offices and the Bureau of Maintenance was reduced. During the same year Long Term Performance Based Maintenance(LTPBM) Project was implemented with four packages namely Manila North Road, Manila South Road, Calpan South Road and Caticlan- Kalibo Road. Almost 400 kilometers of road national road network was reduced in the district engineering offices due to LTPBM Project.

Since I was one of the assigned Project Engineer of LTPBM under NRIMP 1 and 2, I was tasked by our Office (BOM and RMC 2 UPMO) to assist the consultant in the conduct of seminar/workshop in the District Offices. During the end of the workshop, participants was able understand and appreciate the new scheme (PBRM) of maintaining their roads.

The advantages of PBRM is reduced voluminous records on the quantification and quality assurance of maintenance activities that is needed in the payment of completed works .Reduction of Inspectors to monitor and validate the performance of the contractor based on the level of service stipulated in the contract. Simplified computation of the contractor billing by subtracting the penalties due to none compliance of level of service in their monthly gross billing. The contractor is given the free will to introduce the maintenance technique they want to apply in their respective project, provided that the maintenance level of service is met. Another advantage is that the actual need of the road was properly scrutinized and funded, unlike the conventional method that the DPWH is practicing wherein the actual maintenance need of the district offices was submitted in the department. However, release of their budget is limited only on the available fund extracted on the General Appropriation Act.

What are the disadvantage of introducing PBRM Contract?

1. The Maintenance fund The District Engineering Offices were the PBRM Contract is located will be deducted from their Annual Maintenance Budget.

2. Disadvantage on the part of the contractor if there are new laws that was not considered in the contract that may entail additional cost and time in performing maintenance works.
3. Disadvantage on the part of the contractor if there is no contingency allowance for unforeseen activities that is not included in the contract.

What are the risks in introducing PBRM Contract?

In the conventional way of maintaining the road (Quantity and Quality Based Contract) the burden of risks is in the DPWH. While in the Performance Based Road Maintenance Scheme the risk is transferred to the contractor. The risk might be the same as the numbers 2 and 3 disadvantages mentioned above.

Maintenance cost for the same road between Pre and Post PBC is lesser by 20 percent provided that the level of service is the same.

Workload of administration/fieldworks works between Pre and Post PBC decreased as much as 20 percent due to volumetric computation will not be used as basis of payment anymore instead the road is evaluated based on the performance of the contractor on the matrix of level of service stipulated on the contract.

Service level of the road and facilities depends on the performance of the contractor. If they did not perform well the owner (DPWH) can reduce their monthly maintenance cost by imposing penalties that is still advantageous to the government.

Condition of Road Reserve Management e.g road closure period RROW Problems, occupations etc. and complaints from the road user is considered during the DED of the PBM. It is included in the backlog reduction of the contract e.g road safety and other road maintenance features that should be improved in order to meet the standard maintenance level of service. The problems encountered under this category and complaints will decrease by as much as 20 percent.

**ERNANTE S. ANTONIO**  
Engineer V  
Project Engineer  
RMC-II (Multilateral), UPMO

## MINUTES

Survey Name/ Meeting Name	Basic Research on Technical Cooperation of Performance-Based Road Maintenance Contract/ Presentation on the Research Outcome:
Time	2023/01/25 13:00-14:00 (JST)
Location	Web Meeting
Attendees	<b>【JICA】</b> HQ : Kondo R Philippines Office: Inoue Y, Takahashi K
	<b>【DPWH (Philippines)】</b> Mendosa R.C. (PM III), Aranaz A.E.R (PM I), Graza N.T (PM III), Navarro E.D (PM II), Kabling M.B (PM III), Bulan D.B (EIII), DACANAY R (EII), Baylon O (E III)
	<b>【Consultant】</b> OCG : Kobayashi H, Nozawa M

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### Agenda

- ◆ Presentation and discussion on the Research Outcome

Speaker (Titles Omitted)	Content
JICA HQ Kondo	He opened the meeting by thanking everyone for their cooperation in the project and initiated introductions of all attendees.
OCG Kobayashi	<b><u>Presentation and explanation of the Research Outcome</u></b>
JICA HQ Kondo	<ul style="list-style-type: none"> <li>● He requested comments and questions on the Research Outcome from the Philippine side</li> <li>● He also requested questions from the Consultant to the Philippine side</li> </ul>
OCG Nozawa	<ul style="list-style-type: none"> <li>● He observed both WB and JICA PBC project sections under PBC.</li> <li>● He requested the Philippine side to share their summary and experience of the two sections.</li> <li>● He also requested the Philippines side to share additional information and questions from other PBC projects such as Mindanao Project.</li> </ul>
DPWH Aranaz	<ul style="list-style-type: none"> <li>● He requested Mr Nozawa san to explain the differences between the WB and JICA PBC project sections</li> </ul>
OCG Nozawa	He highlighted the following differences: <ol style="list-style-type: none"> <li>1. Scale of initial rehabilitation before the projects was different. The JICA section had significant/sufficient rehabilitation before the PBC project while the WB section had minimum rehabilitation only. Therefore, the starting conditions were different at the start of the survey</li> <li>2. Study of the PBC contract documents (including service level items) for road maintenance under JICA and WB projects showed that the service level items in the Philippines were more detailed than in other countries</li> <li>3. Inspection methods were also different. In the Philippines, more detailed inspection was conducted on the entire stretch. However, in other countries such as US and Chile, only sample inspection was conducted.</li> </ol>
DPWH	<ul style="list-style-type: none"> <li>● Selection of the road to maintain was another point of difference between the JICA section and WB section. The JICA section had asphalt overlay for entire stretch but WB section focused on parts of stretch. Therefore JICA section could be maintained more.</li> </ul>



Speaker (Titles Omitted)	Content
	<ul style="list-style-type: none"> <li>● Consideration of maintenance type was another difference. The JICA section took into consideration sections requiring special treatment intervention. However, WB sections only required usual maintenance and rehabilitation.</li> </ul>
OCG Kobayashi	He inquired if the 2 road sections are being maintained by direct/force account and if a private company was contracted.
DPWH	After the PBC project, maintenance of sections are handed over to DPWH. No private company is contracted for maintenance and DPWH regional offices use own maintenance teams.
OCG Nozawa	Based on their acquired knowledge of the advantages of PBC, will DPWH switch to PBC under own budget?
DPWH	Because of constraints in the maintenance budget, there are no current plans to apply PBC by DPWH fund.
OCG Kobayashi	With no further comments from the consultant, he handed the proceedings back to Mr. Kondo.
JICA HQ Kondo	He invited further comments up to the end of the week, thanked everyone for attending and closed the meeting.

以上

### チリ国関係者との協議リスト

年/月/日	時間	会議方式	先方出席者	主な議題
2021/11/12 (金)	2000 - 2100 (JST)	オンライン	公共事業省、JICA 事務所	調査概要説明・協力依頼
2021/11/26 (金)	0900 - 1020 (CST)	対面	公共事業省保全局	PBC 管理状況聴き取り
2021/11/26 (金)	1040 - 1120 (CST)	対面	公共事業省コンセッション事業局	PPP 管理状況聴き取り
2021/12/06 (月)	1500 - 1630 (CST)	対面	コンセッション事業者	PPP 実施状況聴き取り
2021/12/07 (火)	1000 - 1115 (CST)	対面	現地施工業者	PBC 実施状況聴き取り
2021/12/10 (金)	0930 - 1030 (CST)	オンライン	現地施工業者	PBC 実施状況聴き取り
2022/04/11 (月)	0930 - 1100 (CST)	対面	現地施工業者	PBC 実施状況聴き取り
2023/01/19 (木)	2000 - 2100 (JST)	オンライン	公共事業省、JICA 事務所	調査成果発表

## Meeting Memo

Meeting Agenda	Kick-Off-Meeting of the Project (Chile)
Date & Time	Friday, 12 / Nov / 2021 08:00 (Chile) / 20:00 (Japan)
Venue	Via remote communication
Participants	<ul style="list-style-type: none"><li>- Ministry of Public Works of Chile (MOP) Mr. Ernesto Barrera, Head of National Conservation Department Mr. Mario Anguita, Deputy Head of National Conservation Department Mr. Oscar Garrido, National Conservation Department</li> <li>- JICA HQ Mr. Tsuyoshi MIZUNO</li> <li>- JICA Chile Office Mr. Shoji OZAWA Ms. Toshimi KOBAYASHI</li> <li>- Oriental Consultants Global Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Takafumi KAMEDA (Project Coordinator) Mr. Max Gildemeister (Project Assistant – Chile)</li></ul>

### Notes:

1. The kick-off meeting began with all participants introducing themselves.
2. Mr. Kobayashi proceeded to present the Project outline for MOP. And Mr. Kobayashi also explained his field work schedule in Chile (17/Nov – 11/Dec).
3. Mr. Barrera made it clear that his department does not oversee concession projects. Instead, they oversee all public roads that are NOT managed under concession projects.
4. Mr. Barrera expressed that the roads under PBC that they oversee do not consider IRI (International Roughness Index) measurements.
5. Ms. Kobayashi (JICA-Chile) mentioned that she was in contact with the Ministry's Department of Concessions and that they could not attend this meeting. She will assist in opening communications between OCG and the Department of Concessions.
6. After Mr. Kobayashi's presentation, Mr. Barrera expressed his department's full cooperation to the Project. His team also said that they would provide presentations on PBCs that they manage and suggested OCG visit the "[Global Contracts](#)" site.
7. MOP and OCG agreed to hold a meeting that will tentatively take place on **Friday November 26 at 9:00 am** at the MOP's office. Mr. Gildemeister will coordinate with Mr. Barrera's team to confirm the meeting.

## **Basic Research on Technical Cooperation of Road Maintenance Contracts (JICA)**

8. MOP will pick up some contractors those own rich experiences of PBC projects and introduce them to OCG.
9. Mr. Barrera inquired due date of completion of filling the questionnaires those were sent by JICA/OCG. Mr. Kobayashi answered that early completion will be much appreciated. However, OCG also understood some items will take time to complete. OCG will follow up till the completion.

*End*

## Meeting Memo

Meeting Agenda	In person meeting - Conservation Department (Chile)
Date & Time	Friday, 26 / Nov / 2021 09:00 – 10:20
Venue	Ministry of Public Works-HQ (MOP-HQ)
Participants	- Conservation Dept., Sub-directorate of Maintenance, Directorate of Roads Mr. Mario Anguita Medel, Deputy Director of Maintenance Mr. Oscar Garrido Pineda, Engineer  - Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)

### Notes:

1. The meeting began with an official photo of both teams.
2. Mr. Kobayashi began the meeting by informing the MOP team that he had a few questions regarding the presentation on “Mixed Global Contracts”.
3. The questions and answers are listed below:
  1. Where in the Ministry's organizational structure is the General Directorate of Concessions located? *¿En qué parte del organigrama cae la Dirección General de Concesiones?*
    - a. The General Directorate of Concessions is one of three General Directorates within the Ministry. The Department of Conservation is part of the Sub-directorate of Maintenance which is part of the Directorate of Roads, which falls under the General Directorate of Public Works.
  2. What is a “Basic Intermediate Road”? *¿Qué son caminos básicos e intermedios?*
    - a. A Basic Intermediate Road is a type of road that meets certain economic requirements (number of road users per day) and is therefore subject to improvements that require some degree of planning and engineering. For example, a non-paved road may become a basic intermediate road if it reaches a certain threshold of daily users (approx. 400 vehicles). When it passes this threshold, improvements can be made in the form of a thin layer of asphalt (or others depending on its geographical characteristics and availability of materials). These improvements require some sort of planning and project execution. The difference with paved roads (asphalt and concrete) lies in the thickness of material layers.

## Basic Research on Technical Cooperation of Road Maintenance Contracts (JICA)

- b. On the other hand, Basic Solution Roads are those that use cheaper pavements such as asphalt seals, stabilizers, among others. These are oriented to low-traffic roads with an average daily traffic of less than 200 vehicles. They are not maintained under CGNS.
3. What are “Protection Layers”? *¿Qué son capas de protección?*
  - a. Protection layers are asphalt mixes that are applied to granular layers to protect and improve their conditions.
4. What is a “Stabilized Granular Layer”? *¿Qué es un granular estabilizado?*
  - a. The stabilized granular layers correspond to a basic solution that is characterized by the application of some type of binder or soil stabilizer (salts (Sodium Chloride (salt) and Magnesium Chloride (bischofite)), asphalt, concrete, mining chemicals or others, depending on the area’s characteristics and availability of materials) that keeps the soil more cohesive.
5. On slide 6, what is the difference between “Paved Roads w/ concessions” and “Concessioned Network in operation”? *En la diapositiva 6, ¿cuál es la diferencia entre “red pavimentada con concesiones” y “red concesionada en explotación?”*
  - a. “Paved Roads w/ Concessions” refers to the total road network including concessions while “Concessioned Network in Operation” only refers to concessioned networks.
6. On slide 9, we need a breakdown of CG and CGNS. *En la diapositiva 9, necesitamos distinguir las cifras entre CG y CGNS.*
  - a. The exact numbers will be shared by the Ministry of Public Works. Mr. Garrido gave a rough estimate that 44,000 km of roads are under Mixed Global Contracts (CGNS) while the remaining 3,500 km are under Global contracts (CG). Mr. Garrido made it clear that the figures used are dynamic and will vary depending on the date measured.  
*(The roads lengths by the contract schemes were respectively indicated at 45,331km of CGNS and 2,213km of GC at a later day.)*
7. Total Km on slide 9 does not match the Total Km on slide 6. *El total de KM de la diapositiva 9 no coincide con la diapositiva 6.*
  - a. As Mr Garrido explained previously, the total kilometers will vary depending on the date of measurement. The variation in the total network of Global contracts can vary is given by the fact that some contracts may end and may not be reinstated to operative status immediately. This is why there may be time gaps in such occasions,

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which in turn translates to a lower value of the total network covered during that gap. Contracts are continuously changing, therefore numbers will be constantly changing.

8. Can we clarify the difference between the types of contracts? *¿Podrían decirnos cuáles son las diferencias entre los contratos?*
  - a. Conservación Global (CG): refers to contracts that only take into consideration Unit Price series in case of implementing routine and periodic maintenance works.
  - b. Conservación Global Mixtos (CGNS): refers to contracts that take both Unit Price series (in case of implementing routine and periodic maintenance work) and lump sum payments based on performance (in case of meeting required service levels).
9. Do slides 13 and 14 refer to payments or work? *En las diapositivas 13 y 14, ¿se refieren a las obras o los pagos?*
  - a. Both. Global Mixed Contracts are received<sup>1</sup> by the Treasury on a monthly basis for routine maintenance and once per year for periodic works, and every two months for service level tasks. In each of these receptions (monthly, annual and every two months), a commission of two public sector professionals is appointed to verify the amount of work executed for unit prices series and compliance levels for service level tasks. Payments will be made monthly by adding the routine and periodic tasks carried out in said period. Every two months, said payment will increase due to the inclusion of the payments regarding the service level tasks.
10. Breakdown of values on slide 22. *¿Podrían darnos los valores para cada tipo de contrato?*
  - a. The Ministry of Public Works will provide this figure via email.
4. Mr. Kobayashi asked for suggestions on roads to survey. The MOP will send over suggested roads via email. MOP said that if road survey is carried out during the week, they can accompany Mr. Kobayashi and provide further information on the selected roads.
5. Mr. Kobayashi asked to be contacted with contractors who are working under Global Mixed Contracts in order to set up a meeting. MOP said they will provide contact information via email.

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<sup>1</sup> Also 'receptions'. Term used in Chile to indicate that a project, work or maintenance has been approved and signed off by a Government Institution.

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### Commitments:

- Ministry of Public Works:
  - Will aim to have the project questionnaire ready by Wednesday December 1.
  - Will send a suggested road for surveying via email.
  - Will send contact information for contractors under Global Mixed Contract via email.

*End*



## Meeting Memo

Meeting Agenda	In person meeting - Concessions Department (Chile)
Date & Time	Friday, 26 / Nov / 2021 10:40 – 11:20
Venue	Ministry of Public Works, Annex
Participants	<ul style="list-style-type: none"><li>- Ministry of Public Works of Chile (MOP) Ms. Jimena López, Head of the Department of Road Works Operations, Operations Division, General Directorate of Concessions Ms. María José Galleguillos, Technical Advisor, Department of Road Works Operations, Operations Division, General Directorate of Concessions</li> <li>- Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)</li></ul>

### Notes:

- The meeting began with Mr. Kobayashi thanking Ms. Lopez for taking the meeting.
- Mr. Kobayashi proceeded to ask questions about how concessions operate in Chile.

The questions and answers are listed below:

- Where can we find administrative bases for concession contracts?
  - These documents are online. The MOP will provide links to access the necessary documentation.
  
- How does maintenance work within concession contracts?
  - Maintenance requirements and service levels are established in the bidding conditions for the concession contracts. It is expected that the contractor in charge of the concession will constantly maintain the roads and highways in accordance with the provisions of the bases. In older contracts, the concessionaire must submit a yearly report on the control and monitoring of the condition of the pavement, indicating the condition of the road surface, surface irregularity, rutting, cracking, potholes, slip resistance, among others (this report is not public information). The new contracts establish service levels, in which the information and measures on the state of the network must be constantly updated. Notwithstanding, the Government Inspector (MOP) may request the National Highway Laboratory (official laboratory) to carry out the measurements it deems appropriate in the concessioned network in order to establish the official parameters. This information is compared with the information of the concession company. In general, in the event

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- of non-compliance with the requirements and required thresholds, fines will be applied when appropriate (fines are public information).
- How long do concessions last and what is the contractor responsible for?
    - Normally, road concessions last at least 20 to 30 years. Anything less is not viable, due to the size of the Projects, since the concession holder is responsible for designing, obtaining environmental permits and executing the construction of the road works, a process that lasts approximately 6 years, after which comes the period of operation of the contract.
  - What kind of firms bid to win the concessions?
    - Bidders generally tend to be conglomerates of international companies, as the size and scope of the contracts are often too large for any Chilean company to manage. The international conglomerates come mainly from Spain and Italy, and recently a conglomerate from China has won the tender for a contract. However, the norm requires that a concession company be formed in Chile and be governed by Chilean legislation.
  - What work is included in the bidding conditions for the concession contracts?
    - The bidding rules include the conceptual design that is prepared by the Ministry of Public Works (MOP) and, normally, the contract winners are responsible for designing and developing the Project in detail and obtaining construction permits, environmental approval and then build the project. They also establish the rights and obligations of the contracting parties and govern for the duration of the Project.
  - Which highways do you recommend for us to survey for the project?
    - The recommended highways are the Santiago - Talca route and the urban highways within Santiago. The MOP will provide contacts via email of the contractors that manage the roads to guide the surveying.

### Commitments:

- MOP:
  - Provide contact information with those in charge of the Santiago - Talca concession via email.
  - Will provide links to the Administrative Bases and Service Levels via email.

*End*

## Meeting Memo

Meeting Agenda	In person meeting - Intervial ISA (Route No.5 South: Santiago - Talca Concession Section)
Date & Time	Monday, 6 / Dec / 2021 15:00 – 16:30
Venue	Intervial ISA Offices (Angostura Toll Booth Area)
Participants	<ul style="list-style-type: none"><li>- Ministry of Public Works Mr. Hector Villacura Ocampo, Government Inspector (Santiago - Talca)</li> <li>- Intervial ISA (The Concessionaire) Mr. Daniel Padilla Gutiérrez, Deputy Manager of Infrastructure Mr. Claudio Fonseca Ibarra, Chief of Major Conservations</li> <li>- Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)</li></ul>

### Notes:

1. The meeting began with Mr. Kobayashi thanking the Government Inspector and ISA for receiving us at the concessionaire's offices.
2. Mr. Kobayashi asked who owns the office where the meeting was held. Mr. Villacura (Government Inspector) replied that they are the offices of ISA and that he manages two teams of consultants, one for operations and the other for construction. These two teams have separate offices. Approximately 20 people are part of the operations advisory team and 15 of the construction team.
3. Mr. Kobayashi asked what type of works the construction advisors supervise, to which Mr. Villacura replied that the road widening works such as installation of the 3rd lanes on both sides and new construction of the service roads.
4. Mr. Kobayashi asked ISA about the start of the concession and its duration. Mr. Padilla commented that they were awarded the contract in 1999 and immediately began with construction. He explained that a 25-year contract duration was initially projected (ending in 2024), however, it was modified. Currently, the contract operates under a 'variable period', which means that the contract will end once accumulated revenue came from the toll fees meet the investment amount. Currently, it is estimated that it will end in the year 2032.
5. Mr. Kobayashi asked about the country of origin of the company that owns the concession. Mr. Padilla informed that ISA is a Colombian company that has recently been bought by another Colombian company called Ecopetrol.
6. Mr. Kobayashi asked about the size of the road network handled by the concession. Mr. Padilla responded that they operate approximately 237 km, of which 190 km

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correspond to Ruta 5 Sur and 47 km to the southern access to Santiago. Mr. Kobayashi asked if it is one of the larger routes in Chile to which they answered that within the category of interurban routes, it is one of the largest in length, and in traffic volume of heavy vehicles.

7. Mr. Kobayashi asked how road surveying works. Mr. Padilla responded by saying that the concessionaire must generate an annual report with the overall status of the road. The report contains information on compliance status of the responsible road elements. In particular, the pavement condition is measured by various parameters (e.g. IRI, cracks, skid resistance, etc). The other elements (e.g. drainages, signs, road markings, etc) will be required to remain the same conditions at the construction completion. The report is sent to the Government Inspector.  
The advisory team (usually consultant) on behalf of the Government also conducts inspection work by using the same parameters on randomly chosen segments to examine correctness of the submitted report.
8. ISA/Government Inspector explained that recovery works from large disasters will be allocated by insurance.
9. Mr. Kobayashi inquired about the determination of toll prices. Mr. Padilla answered that the concessionaire adjusts prices annually according to inflation, corresponding cost estimates and traffic volume forecast. The adjustment formula is established in the concession contract and must be analyzed by the Government Inspector and his team prior to its approval.
10. Mr. Kobayashi inquired about the use and operation of the weighing stations. Mr. Padilla and Mr. Villacura responded that two weighing stations were built by the concession company (at km 62 and 144), which were then transferred to the Directorate of Roads for operation. All heavy trucks must pass through the weighing stations. Typically, most vehicles meet the requirements. In the event that they don't and the weight is substantially greater than what is allowed, they will have to remain at the station and another truck will have to help lighten the load. On the other hand, the vehicle will be able to continue driving by paying fines, if the excess weight is not so significant. There are camera systems that fine trucks that do not go through weighing. They highlighted that only the trucks that pass through the two weighing points are weighed. Those who enter and leave the highway without crossing through these points cannot be weighed.
11. Finally, Mr. Kobayashi asked about traffic volume during the pandemic. Mr. Villacura responded that during the quarantines, the flow of personal vehicles decreased considerably. In that period, the flow of heavy vehicles transporting merchandise increased slightly. After the end of the quarantines, the flow of personal vehicles has

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increased by around 10-15% compared to 2019 because people are not using public transport services.

### **Commitments:**

- Mr. Villacura will send the Santiago - Talca Concession Contract in digital format to facilitate its translation into English.
- Mr. Villacura will send the organization chart of the concession project.

*End*

## Meeting Memo

Meeting Agenda	In person meeting - MASERCO
Date & Time	Tuesday, 7 / Dec / 2021 10:00 – 11:15
Venue	MASERCO (Alcalde Guzman 1400, Quilicura, Santiago)
Participants	- MASERCO Mr. Cristian Kraemer, General Manager Mr. Mauricio Salinas, Head of Operations Illapel  - Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)

### Notes:

1. Mr. Kobayashi began the meeting by thanking the MASERCO representatives for conducting the interview at their offices.
2. Mr. Kraemer began by referring to how MASERCO operates under Global Contracts (CG). He explained that due to MASERCO's size (approx. 450 staffs), they do not see CGs as a highly profitable investment. MASERCO uses mixed contracts as an opportunity to establish operations in a certain area during the four years that these contracts tend to last. By constantly winning the CG bids for a specific area, MASERCO can establish its operations, plants and machinery in the same place, which is more efficient in terms of costs. In turn, this allows them to apply for and obtain larger contracts in that same area that are more profitable investments for a company of its size. He explained that CGs are designed for smaller companies. Mr. Kraemer also made clear that the key to operating under CGs is to maximize efficiency. These contracts are supervised by a Government Inspector and a team of advisors who can be overwhelmed by the network's size. Because of this, MASERCO anticipates their supervision requirements and informs them of deficiencies that have been repaired before they are noticed by the Inspector.
3. Mr. Kraemer explained that they have been present in Illapel<sup>1</sup> for 25 years, an area where they handle 6 contracts of different sizes (2 are CG). Their presence in this specific area allows them to lower operating costs and make more competitive offers in contracts open to bidding.
4. Mr. Kraemer explained why they participate in bids for Mixed Global Contracts (CGNS). One of the benefits (additional to maintaining their presence in the area) is that it allows

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<sup>1</sup> Illapel is a city which is part of the Choapa Province which is in the Coquimbo Region (400km north of Santiago approx.). The Choapa Province has an area of 10,131 km<sup>2</sup> and a population of 90,670 (population density of 8.95 hab/km<sup>2</sup>).

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them to anticipate costs. This means that the structure and length of the contract makes it easier for them to buy materials and supplies when they deem appropriate and save the excesses that are not used immediately for the execution of different works.

5. Mr. Kraemer referred to the modifications that can occur during the course of a CGNS. In certain instances, one of the parties (government or contractor) may request a repair and / or construction within a specific segment (one of the reasons could be that the community requested it from one of the parties). When this occurs, the modification must be approved by both parties. In the event that the modification is proposed by the government, MASERCO (and any company in its position) must accept the modification if its cost does not exceed 30% of the value established in the contract for that year. In the event that MASERCO requests a modification, it must be approved by the regional authority if it is less than \$ 125 million pesos (USD 150,000) and by the Minister of Public Works if it is greater than that amount. Getting the Minister's signature can be a slow process that takes several months. MASERCO described this as a bottleneck.
6. Mr. Kobayashi consulted Mr. Kraemer on how payments work. One of the problems that companies like MASERCO face is that they are required by law to pay employees and suppliers within 30 days while the government does it in 60 days. This means that there is a delay in payments that can have dire consequences for companies that do not have funds to cover these expenses. Many times they must resort to factoring companies (companies that advance the payment of invoices in exchange for a percentage of the invoice) to maintain a cash flow that allows them to remain operational. He also mentioned that the government does not make advance payments during contracts, so companies are responsible for setting up operations and financing them during the first 60 days. According to him, this is a significant barrier to entry as a lot of start-up capital is required to cover these expenses. Although CGNS are aimed at smaller companies, this type of barrier to entry limits who can participate.
7. Mr. Kraemer explained how the different categories of companies work for these types of contracts. MASERCO is a first-class company in most specialty areas, which means that it has expertise in each specific category.
8. Mr. Kobayashi asked about the extent of the CGNS that MASERCO manages. Mr. Kraemer replied that they operate a 333 km network. He added that they have 450 employees who come from remote areas of Chile, so they have a very important responsibility in the communities where they operate. He stressed that for many employees it is the only possible source of income so they must ensure the continuity of their operations despite delays in payments from the government.

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9. Mr. Kobayashi asked about the training MASERCO provides to its employees and if they would be willing to receive training from the government. Mr. Kraemer responded that they only train employees who have specific tasks (he mentioned topographic surveyors as an example), and they do so depending on the specific needs of each contract. He commented that he would not be willing to receive training from the government since the way they operate is different. Mr. Salinas said when comparing MASERCO's work with that of government teams, MASERCO operates more efficiently.
10. MASERCO mentioned that one of potential risks of longer term contracts was an inflation risk. Inflation rate (%) during the contract period is calculated on Consumer Price Index (CPI). However, the inflation rates among construction industries (e.g. machineries, asphalt, cement, fuel, etc) shows different trends with CPI. In years prior to the pandemic, Chile's inflation rate was constantly around 3% and it currently stands at 7% (construction materials' prices have outpaced the CPI consistently, increasing costs while payment remains relatively stable). The gap between the above 2 rates brings an uncertain element in terms of financial management of the contract.
11. In the initial 6 months of the new president's period, agreements of new contracts will be suspended while incoming teams review the previous government's work. The payments for existing contracts continue as planned.
12. 5% of payments will remain secured by the government until completion of the contract for ensuring substantial work completion of the contractor till the last moment.

### **Commitments:**

- MASERCO will send the document that shows its classification for the categories in which it operates.

*End*



## Meeting Memo

Meeting Agenda	Meeting between OC Global & BITUMIX
Date & Time	Monday, 10 / Dec / 2021 09:30 – 10:30
Venue	Remote
Participants	- BITUMIX Mr. Oscar Plaza, Chief Technician  - Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)

### Notes:

1. The meeting began with Mr. Kobayashi thanking Mr. Plaza for taking the time to attend this meeting.
2. Mr. Kobayashi proceeded to ask about BITUMIX's answer to Q2: advantages of using CGNS. Mr. Plaza mentioned that service level and unit price series works tend to be balanced at around 50% (the specific number will depend on the contract requirements), therefore the risk of payment flows suddenly ending is "relatively" under control. He added that contractors can spread out their work throughout the duration of the contract to have more efficient operations.
3. Mr. Kobayashi asked about the answer to Q3 (the disadvantages of using CGNS) and how bimonthly commissions operate. Mr. Plaza clarified that the bimonthly commissions tend to have irregular criteria for evaluating compliance of service levels. It is common for commission members to vary over the duration of the contract, so it is hard to meet different subjective criteria. Commissions should base at least part of their decisions on reports filed by Government Inspectors (who inspect regularly over the 60 days), yet they tend to rely solely on their on site visits (done once and in a randomly chosen road segment). Because of this, the commission's decisions tend to be more important than the Government Inspector's. There is a power struggle between both entities and normally, the party with higher experience (which is normally the commission) is the final voice. He added that the disparity of criteria on behalf of the commissions makes managing the contract complex since it is very difficult to achieve a standard that is subjective or that goes beyond the requirements of the technical specifications. Furthermore, in certain works or areas, companies are benefited by "relaxed" commissions and in other places suffer due to "strict" commissions. Not being able to foresee how we'll be evaluated forces contractors to increase prices to compensate for the uncertainty.

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4. Mr. Kobayashi asked about the mentioned 'administrative closure'. To this, Mr. Plaza answered that when executing the Administrative closure and final settlement of the contract (review of all formal documents for the duration of the contract), contractors face the challenge of resurfacing 4 years of administrative documents which can be impossible to comply with as it is common to lose trace of documents within our systems (it is normal for staff changes to occur within both party, causing documents to be lost forever). This forces the State to make use of payment guarantees which is a high cost for the contractors. Smaller contractors face the risk of suffering important financial losses because banks will not work with contractors who have not formally 'closed' their previous contracts. A simple solution to this would be to create a shared cloud server where contractors and government can upload documents in real time.
5. Mr. Kobayashi referred to Q4 and the risks of CGNS and so-called 'collapsed roads'. Mr. Plaza said that the transfer of deficient infrastructure that it is no longer possible to maintain from the previous contractor to the new ones is an important risk. On occasions, previous contractors abandon the contract and therefore leave infrastructure in poor condition for new contractors. Mr. Plaza added that there are also issues with determining whether a damaged road will require to be reconstructed or maintained. Current regulations say that if 40% of a road is damaged, it must be reconstructed, but it doesn't specify the type of damage. When bidding for a contract, it is difficult to estimate which roads will require reconstruction and to budget accordingly. We tend to include this cost into our proposals but other companies don't, which greatly reduces their costs (and they simply maintain a damaged road).
6. Mr. Kobayashi proceeded to ask about Q9 and the meeting mentioned in BITUMIX's answer. Mr. Plaza clarified that use of CGNS began with pilot programs to carry out initial testing and evaluation. The initial model was discarded and a new one was implemented 10 years ago with no input from the private sector –it was very deficient. Different stakeholders from the MOP, the Chilean Construction Chamber, contractors, consultants and officials who participated in bimonthly commissions, came together and suggested modifications which were taken into consideration. Mr. Plaza said that there are currently no periodic meetings held, even though this would be of great benefit for the industry.
7. Mr. Kobayashi asked about the answer to Q12 and whether these contracts allow for innovation. Mr. Plaza replied that Government Inspectors will only evaluate what is explicitly in the contract, therefore if they wish to innovate to improve the road network, these will not be considered by the inspector. This means that it is an ineffective way to invest our resources. He added that BITUMIX has considered implementing these

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types of contracts in other areas of work, such as to help maintain private road networks for forest and mining companies in Chile (current models are ineffective).

8. Mr. Kobayashi inquired about the demarcation of duties mentioned in Q13. To this, Mr. Plaza said that they have very little information on road conditions before beginning their operations. He stated that they should strive to have more balanced information with the Government as this would take some risk out of our operations.
9. Mr. Kobayashi ended with a final question on the initial 60 days that are required to set up operations within CGNS and whether that period is inspected under unit price series or service level. Mr. Plaza said that the initial 60 days are not inspected. It is the period where they have to invest heavily in the roads to bring them up to operating standards according to the service levels set in the contracts. Contractors must consider these 60 days as an investment cost and tend to spread the cost throughout the entire duration of the contract. Unexperienced or smaller companies can suffer by failing to consider the financial impact of these first 60 days.

### **Commitments:**

- Mr. Plaza agreed to send over BITUMIX's categorization according to the MOP's standards (sent)

*End*

## Meeting Memo

Meeting Agenda	Meeting between OC Global & FLESA (Contractor)
Date & Time	Monday, 11 / April / 2022 9:30 – 11:00
Venue	Avenida Apoquindo 6550, 10th Floor, Santiago - FLESAN HQ
Participants	- FLESA Ms. María Bernardita Pérez, Operations Manager Mr. Mauricio Rojas, Operations Manager  - Oriental Consultants Global (OCG) Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)

### Notes:

1. The meeting began with Mr. Rojas and Ms. Pérez welcoming Mr. Kobayashi to the FLESA HQ. They introduced themselves and provided background information on the company: FLESA has existed for over 40 years, initially as a demolition company, and experienced exponential growth over the past 10 years as they expanded into new areas. In 2010, the FLESA Group created a construction subsidiary which they registered with the Ministry of Public Works (MPW) in order to participate in contract bidding. They had some experience operating Global Contracts and then naturally transitioned towards Mixed Global Contracts (CGNS) when they were introduced by the MPW. They viewed it as a small niche opportunity and at one point had 22 contracts under management (they currently operate 12 contracts).
2. The benefits of operating CGNS include the fact that they are small contracts which allow them to operate in specific areas and with a fixed team for a prolonged period of time (4 years). This also allows FLESA to have a presence in areas where they are working on other projects and/or contracts.
3. Ms. Pérez provided insight on the implementation of CGNS by the MPW, as she worked there when this happened. Initially, the MPW oversaw and maintained roads through service levels. They realized that it was inefficient for them to do so and it also caused them to lose money. Because of this, they decided to open CGNS to contractors.
4. For FLESA, the main disadvantage of CGNS is how dependent workflows are on relationships between the different stakeholders, mainly contractors and Government Inspectors (GI). Mr. Rojas and Ms. Pérez stated that a good relationship with the GIs is key to have proper operations. Unfortunately, good relationships aren't always possible and working with GIs can be hard.

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5. Regarding the risk of working with CGNS, they said that contractors bear 100% of it. Again, they mentioned that the relationship with the GI is very important. A bad working relationship may result in the GI being very “strict” when inspecting roads and applying fines, which may result in a contractor losing money throughout the duration of the contract. The FLESAN representatives also mentioned that GI designation to each specific contract is also a risk. On occasions, the GI might be inexperienced or unprofessional, which will in turn affect how the working relationship develops.
6. The main issue that occurs during bidding stages is the differences in information. For example: the contractor is responsible for researching the status of the road network, however, there is some infrastructure information that they cannot access. Another problem which has become more common due to the pandemic is high inflation and, consequently, rising costs of materials. These are not taken into consideration in contracts. Aside from these specific points, the bidding process works well and is very transparent.
7. The FLESAN representatives said there is no negotiation stage.
8. Regarding the problems encountered during the implementation stage, Mr. Rojas again mentioned the difficult relationship with GIs. In the early months of each contract, when they are installing operations, some GIs have been harder to work with. Normally, the GI sets the tone for the expected service levels of maintenance, so if work meetings cannot be arranged, the GI might request the company to change its way of operation after a few months. The FLESAN representatives also mentioned that working with inexperienced GI can be troublesome as they have a hard time balancing requests, demands and pressure from local communities and authorities.
9. When asked about the problems during payment stages, FLESAN representatives said that they don't get paid in the first two months of the year, even if contracts stipulate that payments will be carried out monthly. This is accepted as a normal practice. They also mentioned that payment flows might be interrupted during the course of the year because of the way they are structured in the MPW's budget. The MPW allocates pools of resources for various CGNS in each of Chile's regions (these pools are called BIPs). The MPW artificially caps the size of these resources for payments in order to make sure it is spent in its entirety<sup>1</sup>. This artificial budget cap means that contracting firms may not receive full payment during the year and must

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<sup>1</sup> This responds to how budgets are managed in the Chilean Government, not just the MPW. Whenever any government department fails to spend the entirety of the budget that they are... allocated, they will lose those resources for next year's budget. The rationale is that the unused resources could have been used for other government expenses. Because of this, departments would rather ask for limited budgets and spend all of it, than ask for large budgets and have leftover resources.

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wait for budget reallocations (a slow and bureaucratic process which may last 2-3 months). Contractors could file a formal complaint, though they choose not to in order to not deteriorate relationships with the government. The issues with payment flows are considered to be part of the risks of operating CGNS.

10. Regarding personnel training, the representatives of FLESAN said that they did not offer periodic or formal training to their on-site workers because the operations are very simple. They do offer training to managers on strategic planning, maintaining appropriate relationships with stakeholders and that executives attend conferences and seminars held by the MPW and other local organizations (these were more common before the pandemic).
11. When asked if they achieved technical improvements through the implementation of CGNS, the FLESAN representatives stated that the duration of these contracts allows them to improve the efficiency of their teams. The duration also allows the teams to get to know local stakeholders and improve relationships with suppliers and local authorities. They also become very familiar with the road network, allowing them to operate proficiently.
12. When asked if the demarcation of duties between the “client” and the “contractor” is fair, both representatives said no. The main issue, as they mentioned before, is that the contractor bears 100% of the risk associated with the contract. This risk includes the subjective interpretation of service levels by the responsible GI.
13. The FLESAN representatives stated that they are interested in continuing to operate CGNS. The problems mentioned during the interview are the same for all contractors, not specific to FLESAN.
14. Ms. Pérez said that opportunities of work have remained the same post-CGNS, that returns on investments have decreased, contracts are a little less attractive, technical capabilities have remained the same and risks associated with the contracts have increased.
15. To end the interview, Mr. Kobayashi asked about the number of employees in FLESAN. Mr. Rojas said that FLESAN Group has around 3,500 employees (60% in Chile and the rest in Peru), of which 600 work with CGNS (approximately 50 per contract).

### Commitments:

- None

*End*

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### Meeting Memo

Meeting Agenda	Remote meeting - Ministry of Public Works (Chile)
Date & Time	Thursday, 19 / Jan / 2023 08:00 – 09:00 (Chile Time)
Venue	Remote
Participants	<u>Conservation Dept., Sub-directorate of Maintenance, Directorate of Roads, Ministry of Public Works (MPW)</u> Mr. Sergio Vargas, Deputy Director, Sub-Directorate of Maintenance Mr. Oscar Garrido Pineda, Head, Conservation Dept.  <u>JICA</u> Mr. Shuntaro KAWAHARA, Senior Advisor, JICA-HQ Ms. Toshimi KOBAYASHI, Representative JICA Chile  <u>Oriental Consultants Global (OCG)</u> Mr. Hiroaki KOBAYASHI (Chief Consultant) Mr. Makoto NOZAWA (Deputy Chief Consultant) Mr. Max Gildemeister (Project Assistant – Chile)
Theme	Presentation on the Research Outcome

#### Notes:

1. Mr. Kobayashi began the meeting by welcoming Mr. Oscar Garrido and Mr. Sergio Vargas and thanking them for attending.
2. Mr. Kobayashi proceeded to the Power Point presentation. At first, he introduced the study and followed it by defining key terms such as Conventional Road Maintenance Contracts and PBC.
3. He then presented the benefits of PBC to different stakeholders, as well as going over the issues and disadvantages that can arise from PBCs.
4. Part two of the presentation focused on the research content. First, Mr. Kobayashi introduced the research and its purpose. He also went over the outline and the countries involved.
5. Then, Mr. Kobayashi reviewed the results and lessons learned from the research. He presented the appropriate risk mitigation as established by the ADB. This was followed by an analysis of the PBC implementation process.
6. Mr. Kobayashi outlined the major issues and solutions observed in the PBC implementation process based on a WB report and their case study in Kenya.
7. Later, the case study results in the study's target countries were presented, with an emphasis on Chile.
8. This was followed by a classification of case studies based on risk and the effects, issues, and lessons learned in target countries.

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9. Finally, Mr. Kobayashi went over the JICA Technical Cooperation Projects. In this case, the information was not relevant to Chile due to its advanced nature in terms of implementing PBC. This section was merely informative.
10. After the presentation, Mr. Garrido stated that Chile's experience with PBC has been very positive, and was pleased to hear an outsider's perspective. In particular, he mentioned that he was excited to learn that Chile's experience would be very valuable for developing countries.
11. JICA Senior Advisor said that Chile's case is very informative because of the number of PBC under implementation. For developing countries, one of the main issues is the difficulty of implementation with government funds. Kenya managed to do this. JICA helps with developing documents, processes, and other aspects, but cannot be responsible for the entire implementation process. JICA's role is that of an assistant.
12. Mr. Garrido said that Chile is working on further developing and improving the PBC application. Inspections are still visual and they are looking to develop better inspection processes. To do that, they are still defining what the country's requirements are. Mr. Garrido also stated that Chile is implementing an asset management software that would greatly assist in the maintenance of all road assets under the Ministry's supervision.
13. JICA Senior Advisor agreed that inspections are very relevant for proper implementation. Visual inspection is still useful and it is encouraging to learn that new methods are being pursued. He mentioned that because Japan does not implement PBCs in the same way, Chile's experience has been very helpful.
14. Mr. Garrido mentioned that they take pride in Chile's implementation and hope that they will continue down this path in the future. They were happy to learn that the information was useful and will help developing countries.
15. JICA Senior Advisor ended the meeting by stating that JICA holds online training courses for developing countries. He asked if Chile would be willing to participate as a teacher for other countries. Mr. Garrido said that Chile would be willing to both teach and attend as a participant to learn more about other countries' experiences.
16. This concluded the meeting.

### **Commitments:**

- JICA/OCG:
  - Will send the presentation, further information, and results on the study to Chile's MPW.

*End*