

# Public-Private Partnership Implementation in Developing Countries: Output and Performance-Based Contracts (OPRC) - New Trends in Financing and Procurement

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## 1. Introduction

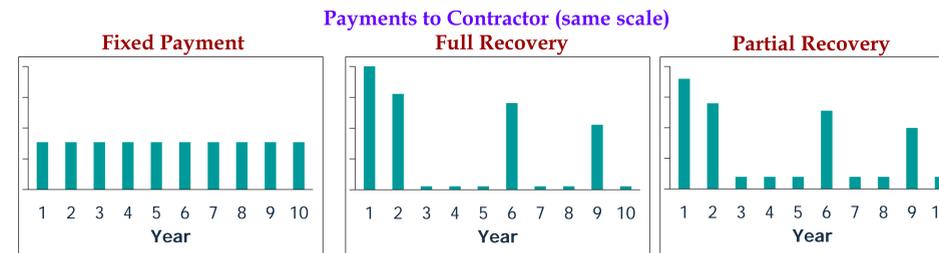
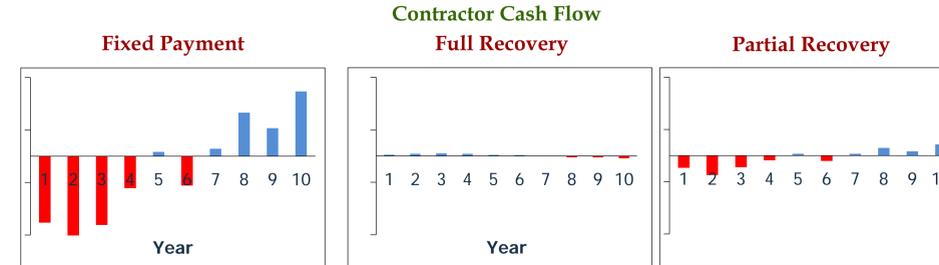
- Most international donor financing in developing countries in the past was input-based – did not give contractor any responsibility as to the longevity of the road’s life.
- Output based contracts allow the Contractor to plan activities according to his schedule, but also gives the government a way to insure the results.
- OPRC is a special kind of PPP – it includes sharing of finances and sharing of risks, while keeping constant other factors (such as when to perform the initial investment based on service indicators)
- Once the Contractor is measured by the results of the project, it is easy to insure that the road treatments give benefits to the people of host nation, by insuring specific levels for many road elements (drainage, signs, road condition in terms of roughness, etc.).
- Gives the contractor responsibility for maintaining a road network for a given number of years (5-25 years), essentially turning the OPRC project into an **Asset Management System**.

## 2. Major OPRC Features

- OPRC focus on **output** and not on input: OPRC eliminates **risk** of Clients to pay on completion of works even if outcome is deemed as “unfit” for the Client’s needs
- Output is measured based on **actual performance**, i.e. what is achieved (ride quality – usually predetermined) rather what is done (mill and asphalt overlay on a road).
- Aligns the motivation and performance of Contractors with the Client’s needs and goals.
- Contractors become stakeholders** because they are directly rewarded for value they achieve for the Client, i.e. the Contractor is focused on achieving targets.
- Risks are defined and shared equitably between the parties.
- In many cases, OPRC is not defined on a single road, but rather on a road network – usually on a few of the country’s major roads.
- Performing a conceptual design of the road sections in the Asset Management network – including several alternatives for economic evaluation.
- Costing the alternatives, based on market prices and taking into account relevant risk factors.
- Economic** evaluation of conceptual design alternatives. These economic evaluations include the usage of benefits not of interest to the Contractor but to the relevant region, e.g. users’ travel time savings, vehicle operating costs, accidents, etc.
- Based on the economic analysis, “road packages” are created for a single contractor to maintain
- The Contractor must maintain the road package to a given service level – road surface (roughness, surface distresses), drainage elements, signs, and more, for a given period.
- This given period ranges between 5 and 20 years (in many cases it is 10 years).
- When the Contractor returns the road to the government, he must insure that the road will last a predefined period (usually 5 years).

## 3. OPRC Financing

- Fixed payment** throughout the contract period – puts the Contractor at high risk and the Client as well – requires a big contractor with financial ability to fulfill the obligations.
- Full Recovery** - Major treatments are covered 100% (reconstruction and rehabilitation) and yearly fixed payments for the routine maintenance that the contractor is performing. Least risk for contractor, high risk for government.
- Partial recovery** of major treatments (50%-80%) and the rest is recovered by fixed yearly payments.



- Fixed Payment:**
  - Simple Cash Flow for Client
  - High Risk to Contractor
  - Chance of low competition
  - Potentially high prices
- Full Recovery:**
  - Large initial investment
  - Very low risk to Contractor
  - Government must have excellent guarantees for keeping Contractor in country
- Partial Recovery:**
  - Smaller initial investment
  - Slightly higher risk to Contractor
  - More balanced allocation
  - Remaining risk of contractor leaving country

## 4. PPP/OPRC in Developing Countries

- The basic problem in implementing such P3 asset management projects in developing countries is the limitations on local implementation (i.e. lack of large-size contractors capable of dealing with hundreds/thousands of miles of roads) – that is why it is necessary to obtain external contractors, who may or may not be familiar with the local country conditions.
- Differences in procurement of P3 projects in developing countries vs. developed countries – local contractors have the advantage of knowing sources of materials, but on the other hand are less able to bear the financial burden of PPP/OPRC.
- The financial capacity of the local contractors is a major driving factor in developing “sub-network” for asset management. In many cases this is not a problem in developed countries.

## 5. Risks

- Utilized a 4-step approach – **inventory**, **quantification**, **allocation**, and **mitigation**
- Inventory** - detailing types of risks – financial, engineering, environmental, legal, and force majeure.
  - Financial – price changes, inflation, poor cost assessment, contractor default, tax regime, and more.
  - Engineering – incorrect design estimate, cost overruns, utilities, poor materials used, changes in heavy vehicles causing road section to deteriorate more quickly, and more.
  - Environmental – HazMats, noise, flora and fauna, etc.
  - Legal – change of laws, expropriations / right of way, issuing building permits, etc.
  - Force Majeure – earthquake, flood, regime instability, war, etc.
- Quantification** – assign a probability of the occurrence of risk, and assigning a value over the lifetime of the project. Can be based on tables (example below is from Israel).

| Class | Probability | Class | Effect (NPV)                  |
|-------|-------------|-------|-------------------------------|
| 1     | 0 – 1%      | 1     | – \$ 100,000                  |
| 2     | 1% – 5%     | 2     | \$ 100,000 – \$ 1,000,000     |
| 3     | 5% – 10%    | 3     | \$ 1,000,000 – \$ 10,000,000  |
| 4     | 10% – 25%   | 4     | \$ 10,000,000 – \$ 50,000,000 |
| 5     | 25% – 100%  | 5     | + \$ 50,000,000               |

|             |   | Effect |    |    |    |    |
|-------------|---|--------|----|----|----|----|
|             |   | 1      | 2  | 3  | 4  | 5  |
| Probability | 1 | 1      | 2  | 3  | 4  | 5  |
|             | 2 | 2      | 4  | 6  | 8  | 10 |
|             | 3 | 3      | 6  | 9  | 12 | 15 |
|             | 4 | 4      | 8  | 12 | 16 | 20 |
|             | 5 | 5      | 10 | 15 | 20 | 25 |

- Allocation** – who is better set-up to deal with the risk – the contractor, the government, the funding agency, or all three (joint sharing).
- Mitigation** – several risks can be insured against, usage of inflation indices, uninsurable risks are compensated for in the contractor’s bid for the project.

## 6. Conclusions

- New trends – output based contracts as opposed to input based contracts.
- Giving a contractor a “mini-asset-management” system to maintain over a period of time.
- Treatments made based on economic and engineering considerations.
- International donor money can be used to increase employment and allow GDP growth.
- Financial model allows for risk sharing and insuring a revenue stream for the Contractor and predictable outlays for the Government.

