# MediBus

Fleet of mobile clinics bringing primary healthcare to families in the tea plantations of Assam, India

**The challenge**

India is the second largest tea producer in the world, after China. More than half of India's tea production comes from the state of Assam. Last year saw global attention directed towards the deplorable condition of the workers at such tea plantations to the extent that the World Bank and IFC intervened to improve their living conditions.

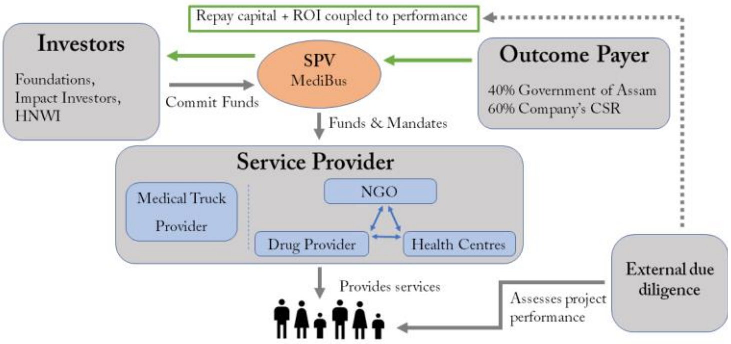
Indian Comptroller and Auditor General published a report (2017)[1] calling for urgent action to provide better healthcare amenities for the tea plantation workers.

- Of the 643 tea estates, with more than 1000 workers each, only 57% have access to functional hospitals. However, most of those medical centres lack quality and resources.
- 17% of the tea plantation workers have TB, diarrhoea is the cause of 35% of deaths of children below the age of 14, 51% of the total encephalitis cases in India were reported in Assam
- The nationwide worst maternal mortality ratio was recorded in Assam.

Karbi Anglong is a central district in Assam with tea estates and a population of 1 Million. Lack of proper road infrastructure and hilly terrain form a hurdle for the commute to health clinics, which are scarce to start with.

**The solution**

MediBus aims to formulate a **Hybrid Impact Bond** to deploy medical trucks that are fit for the terrain, to provide medical care, approved by National Accreditation Board for Hospitals and Healthcare Providers (NABH), to the tea plantation workers and families of Karbi Anglong. The bonds aims to bring standardized healthcare to more than 350,000 people over the duration of 5 years.




**Bond Structure**

**Performance metric**

<u>50% dependent on outcome</u>:

All the points are earned if more than 75,000 people yearly received NABH accredited healthcare. No points are earned if less than 35,000 people were treated. In between those cut-offs, points are earned linearly.

<u>50% dependent on impact</u>:

All points are earned if tuberculosis incident rate decreased 8% yearly and infant mortality rate decrease 8% yearly. No points are earned if the rate remains unchanged. In between those cut-offs, points are earned linearly.

| | |
|---|---|
| Asset Class | Hybrid Impact Bond |
| Principal | $5 Million |
| Maturity | 5 years |
| Investors | Healthcare focused foundations (such the UBS Optimus Foundation[2]), Impact Investors, High Net Worth Individuals |
| Outcome payer | Government of Assam & Private Partner Companies **see CSR box below* |
| Service Provider | NGOs specialized in the healthcare |
| Performance metric | **see detailed explanations in the performance metric paragraph* |
| External Due Diligence | The quality of healthcare is assessed through the standards set by the Indian National Accreditation Board for Hospitals & Healthcare Providers (NABH). |
| Impact Goal | 1) Offering accredited quality health care to 75,000 people yearly. 2) Bringing down tuberculosis incident rate and infant mortality rate by 24% over the project's lifetime. |
| Return | Expected 8% IRR **see Investor's return* |
| Fees | Yearly 1% of committed capital |

**Mandatory CSR in India**

The amendment of the Companies Act of India in 2013, requires all companies with annual profit after tax (PAT), exceeding $0.7 Million, to set apart a specific percentage of their profits for corporate social responsibility (CSR). The percentage ranges from 1-5%, depending on the PAT. MediBus hopes to tap into these funds to constitute a portion of its outcome payment.

**Fund flows**

**Investors**

Initial investors commit the sum of $5 million to MediBus, a SPV, at the start of the project. Capital Calls are distributed as follows: Investors disburse 1 million USD at the beginning of each year to MediBus.

**Service provider**

The main task of MediBus, as a SPV, consists in milestone tracking, contract revision, outcome reporting and fund transfers. MediBus partners up with a **key NGO**, such as the Hindustan Latex Family Planning Promotion Trust (HLFPPT)[3], that manages daily operations and the delivery of healthcare. The NGO maintains a strong relationship with **the governmental health department**, that has already some health missions running[4]. Both entities will join efforts in delivering healthcare.

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[1] Source: CAG glare on health sector, The Telegraph, Oct 2017

[2] They invested in a Indian Social Impact Bond aiming to decrease maternal and neonatal mortality rates

[3] The Indian NGO, specialized in health care, is currently the service provider of the Medical Mobile Units deployed by the government of Assam

[4] 1) Very recently, the government of Assam deployed a few mobile medical units, that can serve as a baseline for further missions. 2) Debuting in 2008, the Indian National Rural Health Mission is a private/public partnership attempt to make healthcare accessible to rural areas in India

In addition, MediBus relies on some subcontractors. From **Medical truck manufacturers**, such as *Odulair* (an American example of a medical truck provider) three fully equipped medical equipped SUV's are purchased at the very beginning. Post the staging phase, where the trucks have been in use for a few months and the operations are fully tested, three additional trucks are purchased. From partnerships with **local generic drug manufacturer**, such as Sun Pharma[5], lower drug cost and reliable drug supply is assured.

### Outcome payer

At the maturity of the bond, a guaranteed 60% of the principal amount is repaid unconditionally of the outcome[6]. The remaining 40% and the return are coupled to the project's performance. The performance assessment starts in year 3 and is done on a yearly basis. Depending on the yearly performance a specific percentage is paid as out to the investors, starting from year 3. If the maximum of impact points were reached (see performance metric), investors are paid out 21% of principal value. If no impact points were earned, nothing above the guaranteed amount is paid out to investors. In between those cut-offs the pay-out percentage varies linearly from 0% to 21% with the number of points reached.

The outcome is shared between the government and private companies. We target large stable private companies that can afford to cover MediBus' unconditional outcome payment as their mandatory CSR and that have an interest stake in the tea estates. Tata Group, a large Indian conglomerate, constitutes such an example. Since companies need to invest a predictable sum as part of their CSR, they do not want to rely on outcome based liabilities. Therefore, the bond's unconditional repayment is be covered entirely by companies' CSR. The government would therefore solely pay for the actual amount of impact achieved.

## Financials & Returns

### Operational key assumptions

- Detection and treatment is offered for a very small fee, just enough to assure the patients' commitment.
- In total 6 buses are deployed. Each is assumed to employ 3 nurses/doctors and to operate daily during 8 hours, out of which 2 hours driving time is counted.
- Two patients are simultaneously treated per truck with an average of 15min treatment time[7].
- A fully equipped medical truck has a price of $100,000[8]
- Average labour/ maintenance/ overhead cost is assumed to be $3.5[9] per patient per visit. Average drug/ medical supply cost is assumed to be $3.5[10] per patient per visit.

### Uses of Funds

Half of the trucks are purchased at the beginning of the project and the other half is purchased after one year; those are the major CAPEX components. The main OPEX components are fuel, drugs/ medical supplies, labour/ maintenance and management fees. OPEX remains roughly constant but is adjusted for an expected inflation of 4.8% going forward.

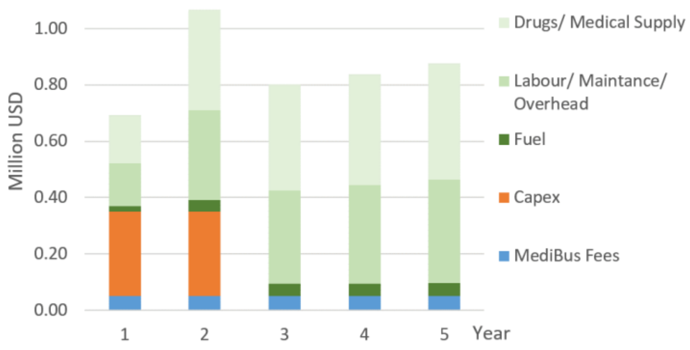


*Figure 1: Uses of funds*

### Investor's Return

See 'Investors' and 'Outcome Payer' under Fund flows for details on investors' cash flows. All in all, investors get an IRR of 8% if the threshold is met in every year after year 2 and experience an IRR of minus 16% if none of the outcome and impact has been achieved.

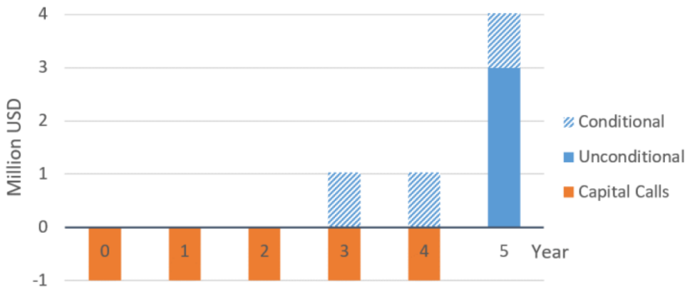


*Figure 2: Investors' cash flows*

**Risk**

| Risks | Mitigation Strategy |
|---|---|
| **Unfavourable treatment from tea plantation owners** | Alignment of incentives by contributing to improve their reputation of bad health conditions on their tea fields |
| **Policy and regulations change** | Strong partnership with government such that policy changes will not affect operations |
| **Exchange rate risk for initial investors** | Hedge the unconditional outcome part with an option |
| **Default by the government** | Include a guarantee from an outside entity, such as OPIC[11] |

**Scalability**

After the completion of the bond, depending on the performance, a second round of the bond can be structured with higher value, bigger outreach and higher efficiency measures. The ownership of the trucks at the end of each bond tenure is given to the government to incorporate into the healthcare system. Furthermore, boat clinics can also be added into the project to cater to the regions around the Brahmaputra river.

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[5] Indian pharmaceutical company with the mission to manufacture drugs affordable and accessible to the marginalized communities.
[6] Comparables, such as the health-related Humanitarian Impact Bond in Congo, Mali & Nigeria, limit the maximal investors' loss to 40% of capital
[7] Time estimated from our small pilot project and from talks with nurses experienced with healthcare related missions
[8] Odulair, an American medical truck manufacturer, medical truck price adjusted to Indian prices by considering the PPP.
[9] WHO's unit estimates of the average cost of an out-patient visit of a no-bed medical centre placed in a rural area in India and operated by an NGO.
[10] Household Health Expenditures in India 2014, by the Ministry of Health and Family Welfare, Government of India.
[11] The Overseas Private Investment Corporation ( OPIC) offers political risk insurance in emerging markets