Co-benefits and indicators
- Why track SD

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Outline

• Why track SD
• What to track
• Monetize co-benefits
• NAMAs may result in, and are likely to be driven by, many important societal benefits other than GHG reduction.

social and economic development and poverty eradication are the first and overriding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development” (Source: 2/CP.15, paragraph 2)
So why track SD?

- Efficiency of policy
- Efficiency of investments
- Efficiency of support
- Progression of development strategies
- Legitimize policy choices
Indicators

Source: Sharma, 2014: Understanding the MRV framework for developing countries, UNEP DTU Partnership
### Co-benefits

**Source:** Approved at CDM EB70: 
[https://www.research.net/s/SD_tool_vers7](https://www.research.net/s/SD_tool_vers7)

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<thead>
<tr>
<th>Environmental Criteria</th>
<th>Social Criteria</th>
<th>Economic Criteria</th>
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<tr>
<td>Air</td>
<td>Jobs</td>
<td>Growth</td>
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<td>Land</td>
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<td>Natural resources</td>
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### Indicators

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<tr>
<th>Indicators</th>
<th>Environmental Indicators</th>
<th>Social Indicators</th>
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<tr>
<td>SOx</td>
<td>Compost</td>
<td>Long-term jobs</td>
<td>Investment/industrial/commercial activities</td>
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<td>NOx</td>
<td>Manure nutrient and other fertilizers</td>
<td>Short-term jobs</td>
<td>Rural upliftment</td>
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<td>Fly ash</td>
<td>Irrigation</td>
<td>Poverty alleviation</td>
<td>Import dependency on foreign sources of energy</td>
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<td>SPM</td>
<td>Soil erosion</td>
<td>Income</td>
<td>Reduced dependency on foreign sources of energy</td>
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<tr>
<td>NMVOCs</td>
<td>Salinization</td>
<td>Wealth</td>
<td>Increase in risk of political conflicts</td>
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<td>Noise</td>
<td>Acidification</td>
<td>Education</td>
<td>Social security</td>
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<td>Odor</td>
<td>Densification</td>
<td>Services</td>
<td>Local technology</td>
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<tr>
<td>Dust</td>
<td>Minimum tillage</td>
<td>Health</td>
<td>Adaptation and viability in local area</td>
</tr>
<tr>
<td>Other</td>
<td>End-of-life pollution</td>
<td>Other</td>
<td>Knowledge developed</td>
</tr>
</tbody>
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### Dimensions

- **Air**
  - SOx
  - NOx
- **Land**
  - Compost
  - Manure nutrient and other fertilizers
- **Water**
  - Irrigation
  - Soil erosion
- **Natural resources**
  - Salinization
  - Acidification
  - Densification
- **Minerals**
  - Plant life
  - Species diversity
  - Forests
- **Waste water**
  - Conservation
  - Supply
- **Distribution**
  - Ecological state
  - Purification
- **Other**
  - End-of-life pollution
  - Other

### SD Taxonomy

- **Environmental**
  - Air
  - Land
  - Water
  - Natural resources
- **Social**
  - Jobs
  - Health & safety
  - Education
  - Welfare
- **Economic**
  - Growth
  - Energy
  - Technology
  - Balance of payments
How to track indicators?

Depends on the activities.

Relevant stakeholders to involve can usually be identified by analysing the value chain.

Look to existing public systems (surveys, statistical institutes, Sectoral data etc.)
Potential secondary MRV indicators to measure sustainable development can be divided in the following:

**Environmental**
- Rates of recycling in the formal and informal sectors, measured at the new facilities, at individual project level and as overall rate
- Amount of compost and/or Refuse derived fuel produced and coal/fertilizer displaced by their use
- Amount of leachate produced

**Economic**
- Savings from using refuse derived fuel, compost, and recyclables in productive processes
- Revenues from sale of Refuse derived fuel, compost and recyclables
- Reduction in transportation costs of waste to distant landfills
- Extension of landfill life
- Savings for less leachate treatment
- Value of products sold based on recycled materials

**Social**
- Number of jobs created by the new facilities or other indirect jobs from handling the three commodities produced (recyclables, compost, Refuse derived fuel),
- Number of informal waste pickers hired in the MBT facilities or formalized in other alternative treatment programs or technologies,
- Decreased health effects to population living near landfills or dump sites (to be measured over the time as part of the overall NAMA MRV strategy)
Monetize SD
South Pole – monetizing approach to waste sector NAMAs

• Mitigation actions are driven by sustainable development benefits that need to be monetized:
  • Identify who is willing to pay for the SD co-benefits
  • Determine the willingness to pay per unit of created co-benefit
  • Facilitate a transaction of this willingness to pay to the producer of the co-benefits

“Willingness to pay” for co-benefits is determined as the existing spending within the current public budget or if privately generated through private spending.

Source: Draft discussion paper presented at side event in Bonn, 7 June 2014 titled: ‘Quantifying and monetizing NAMA co-benefit’
Total Economic Value

Use Value
- Direct
  - Ecotourism
  - Timber
  - Coal
  - NTFP's
- Indirect
  - Icon/PR
  - Carbon sequestration
  - Water protection
  - Wildlife reservoir
- Option, Quasi Option
  - Optional future direct or indirect use
  - Bioprospecting

Non Use Value
- Existence
  - Local/global WTP for preservation
- Bequest
  - Local/global WTP for preservation

Actual market
Hypothetical market
**Firewood Saving Cookstoves SD benefits in China**

**Environmental**

**Forest ecosystem conservation**

**Indicator:** reduced deforestation

**Proxy:** Hectars of forest area

**Monetary proxy:** Ecosystem service values (DeGroot et al 2012) or Value of the wood. Market value of average wood products that come out of the forest might be used or non-market value would be another option as well.

**Social**

**1- Enhanced livelihoods**

**Indicator:** Time savings per household

**Proxy:** Amount of reduced spending time of firewood collection

**Monetary proxy:** Value of minimum wage for buying, China, corrected using Purchasing Power Parity (PPP).

**Economical**

**Balance of payment:**

**Indicator:** the stove can save as much as 50-70% in firewood use (the local official energy department).

**Proxy:** Amount of reduction in firewood consumption

**Monetary proxy:** Price of firewood in the market.

**2- Improved health**

**Indicator** created based on linear relationship between indoor air quality and death rate

**Proxy:** Difference in indoor air quality PM2.5 ($\mu g/m^3$) (Percentage improvement in death rate calculated by applying PM2.5 changes to index)

**Monetary proxy:** Statistical Value of a Life Year
the minimum wage was then normalised into international dollar using the Geary Khamis Purchasing Power Parity (PPP) system, taking into account differences in standard of living. Therefore the value of outcomes was to some degree equalised across countries with disparate standards of living.