Break Out Session 3: Deeper Dig into Accounting Metrics

Aims of session:
to achieve agreement and/or set of recommendations, at the end of the group discussion, on the appropriate metrics for characterizing these impacts/benefits, with adequate justification, further work as needed, remaining questions, and how to pursue the recommendations

Breakout groups:
Breakout group will start with 2 or 3 presentations digging deeper into the topics and would be followed by a moderated discussion.

**Group 1: Climate Metrics** [Group Moderator – Borgar Aamaas]

**Group 2: Health Metrics** [Group Moderator – Jeff Brook]

**Group 3: Agricultural Metrics** [Group Moderator – Harry Clark]

**Group 4: Economic Valuation and Metrics** [Group Moderator – Gary Kleimann]

*Show of hands to see how many will join each group*
Break Out Session 3: Deeper Dig into Accounting Metrics

Group 1: Climate Metrics:

Key questions for the group to consider (with justifications):

- Emissions: for which substances over which time frames do we need to develop emissions that can be used with climate metrics (and units)

- What climate metrics can we use to compare the influence of substances on the rate of near term warming (e.g. over 20-30 year time frames)

- What climate metrics do we use for the warming by end of the century/ peak warming – e.g. to measure how we are achieving the Paris targets?

- What metrics can be used to estimate the course of temperature change over this century?

- What are further priorities for work to improve metrics that can be used?

- What are remaining questions?

- What should the follow up actions be?
Group 2: Health Metrics:

Key questions for the group to consider (with justifications):

- Emission: for which substances over which time frames do we need to develop (and units)
- Emission metrics: are there metrics that can link emissions to health impacts?
- Exposure metrics: what are the required exposure metrics needed for different pollutants to quantify health impacts
- Health impact metrics (and relevant concentration-response functions):
  - Further work:
  - Remaining questions:
  - Follow up actions:
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Group 3: Agriculture and Vegetation Metrics:

Key questions for the group to consider (for each what is useful....

- Emission: for which substances over which time frames do we need to develop (and units)

- Exposure metrics:

- Crop / vegetation impact metrics:

- Further work: (what could make it better)

- Remaining questions:

- Follow up actions
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Group 4: Economic Valuation of Impacts and Metrics for Financing:

Key questions for the group to consider on methods / metrics to value impacts:

- Metrics for valuation of climate impacts:
- Health impact valuation metrics:
- Crop / vegetation and ozone valuation metrics:
- Further work:
- Remaining questions:
- Follow up actions:
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Group 4: Economic Valuation of Impacts and Metrics for Financing:

Key questions for the group to consider on metrics that can be used in financing:

- Requirements for metrics for financing – what do they need to be able to do?
- How can metrics for climate impacts (Group 1) be used for financing mitigation?
- How can the health impact valuation metrics (Group 2) be used for financing?
- How can crop / vegetation and ozone valuation metrics (Group 3) be used for financing?
- How can the different impacts be integrated for financing purposes.

Further work:

Remaining questions:

Follow up actions:
<table>
<thead>
<tr>
<th>Emissions</th>
<th>Climate [Stabilization]</th>
<th>Climate [Rate of Change]</th>
<th>Health</th>
<th>Crops/Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>Ton/yr CO$_2$e</td>
<td>Ton/yr [CH$_4$/BC/HFCs]</td>
<td>Ton/yr [PM2.5/O3]</td>
<td>Ton/yr [$O_3$/PM$_{2.5}$]</td>
</tr>
<tr>
<td>Exposure</td>
<td>GWP</td>
<td>AGTP25 GWP*</td>
<td>Annual Av µg/m$^3$</td>
<td>AOT40 M7</td>
</tr>
<tr>
<td>Response/Impact</td>
<td>°C</td>
<td>°C 25 yrs out °C 25 yr av</td>
<td>Deaths DALYS = YLL+YLD</td>
<td>Ton/4 staple lost/yr</td>
</tr>
<tr>
<td>Valuation</td>
<td>SCC</td>
<td>SCM/SCBC/SCAR</td>
<td>VSL Forgone Output</td>
<td>$/Ton each staple</td>
</tr>
<tr>
<td>Value</td>
<td></td>
<td></td>
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<tr>
<td>Policy objectives</td>
<td>SDG 13: &lt;2°C in 2100</td>
<td>1.5°C in 2100 25-year rate of warming target</td>
<td>SDG 3</td>
<td>SDG 2</td>
</tr>
</tbody>
</table>