Mapping the contribution of the Turkish forestry sector to the SDGs

Melike Hemmami, Consultant
UNDP Turkey
Shortly - Turkish National MRV system design

▶ establish a quality and content framework for GHG reporting in the Turkish Forestry Sector.

▶ assess the current reporting and data environment for forest carbon MRV in Turkish Mediterranean Forests,

▶ provide good practice examples and methodologies for carbon quantification and activity impact modelling
MRV Goals: Valuable Information for Forest Management and Reporting

Forestry MRV system

(National) Greenhouse Gas Inventory and Reporting

Forest management strategy & plans

Climate change mitigation and adaptation

Sustainability monitoring

Maps (GIS data)
- Communication, publication
- Spatial data analysis and modeling
- Change visualization (historic or prospective)
- Land use management

Cockpit report
- Policy or management reporting (“at-a-glance reports”)
- Scenario impact modeling (comparison of activity options)
- Change visualization
- Decision support

Data tables
- Consolidation into higher-level reports (e.g. UNFCCC reports)
- Data analysis, research
- Further processing (in other systems)
MRV Architecture: General Setup for Turkey

Data sources

Reporting

Data processing

Data management

Data input and interfaces

User interface

Output interfaces (reports)

GHG calculations and SDG impact modeling

Forest stock calculations and modeling

Base mapping and stratification

Base data (GIS maps, Remote Sensing)

Forest data (Inventory, Management Plans)

Carbon parameters, socioeconomic and environmental data

MRV requirements
### Sustainable Development Goals

<table>
<thead>
<tr>
<th>SDG Goal</th>
<th>Activity Type</th>
<th>A/R</th>
<th>IFM</th>
<th>Conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDG 1 - No Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Instigation or increase of smallholder income from forestry and forest products</td>
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<tr>
<td>SDG 2 - No Hunger</td>
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<tr>
<td>Instigation or increase of food productivity from forests</td>
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<tr>
<td>Contribution to agricultural quality and resilience</td>
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<td>SDG 3 - Good Health</td>
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<tr>
<td>Instigation or improvement of production of medicinal products</td>
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<tr>
<td>SDG 4 - Quality Education</td>
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<tr>
<td>Provision of forestry access, skills, training and education to the public, students and workers</td>
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<tr>
<td>SDG 5 - Gender Equality</td>
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<tr>
<td>Provision of quality employment and leadership roles for women</td>
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<tr>
<td>SDG 6 - Water and Sanitation</td>
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<tr>
<td>Water filtration - improved water quality and quantity outputs from forested areas</td>
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<tr>
<td>Contribution to watershed management including water supply, access, flows etc</td>
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<tr>
<td>Contribution to reducing flood risk and improving resilience to flood events</td>
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<tr>
<td>Forest impact on stressed water sheds</td>
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<tr>
<td>SDG 7 - Renewable Energy</td>
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<tr>
<td>Production of bioenergy and woodyfu materials</td>
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<tr>
<td>SDG 8 - Good Jobs and Economic Growth</td>
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<tr>
<td>Domestic timber and other products enhances domestic economy and improves resilience</td>
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<tr>
<td>Enhanced quantity and quality of employment in forests and supply chains</td>
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<tr>
<td>Combat enforced or slave labour and exploitation</td>
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</tr>
</tbody>
</table>

### Linkage to SDGs

- Created a drive to carry out the work forward (map the contribution of the forestry sector to the SDGs)
- This prototype showed that MRV of SDG benefits is possible and we decided to continue
Mapping the contribution of the Turkish forestry sector to the SDGs
(Work in progress)

Why:

► To understand the contribution of forestry sector in achieving the SDGs
► Highlight the importance of the sector from an SDG perspective
► To try out a specific sector process for SDGs.
Mapping the contribution of the Turkish forestry sector to the SDGs

(Work in progress)

Aim:

▶ To identify the ecological, social and economic input of and explore how it links to the SDGs

▶ Create a discussion paper to consult/enrich with

Who:

▶ A multi-disciplinary team

▶ Experts on biodiversity, forestry, natural resources economy, sociology, gender, localisation of SDGs and development.
Process

- Process Planning
- Linking process
- Development of indicators
- Assessment and review process

<table>
<thead>
<tr>
<th>1. Group (Social)</th>
<th>2. Group (Biodiversity)</th>
<th>3. Group (Economy)</th>
<th>4. Group (General)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDG 1</td>
<td>SDG 6</td>
<td>SDG 7</td>
<td>SDG 5</td>
</tr>
<tr>
<td>SDG 2</td>
<td>SDG 13</td>
<td>SDG 8</td>
<td>SDG 10</td>
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<tr>
<td>SDG 4</td>
<td>SDG 14</td>
<td>SDG 9</td>
<td>SDG 12</td>
</tr>
<tr>
<td>SDG 11</td>
<td>SDG 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicators cards

- Suggested Indicator(s)
  - Lorem ipsum lorem ipsum etc.
  - Lorem ipsum lorem ipsum etc.

- Related SDG
  - SDG #

- Related target(s)
  - #

- Related Indicator(s)

- Nature/attribute
  - Qualitative:
  - Quantitative:

- Existing data situation in relation to the indicator
  - Available (specify source):
  - Not available:

- What/who should be the data source and/or what should be the data collection strategy? Please specify

- Cycle/period
  - Every 5 or 10 years

<table>
<thead>
<tr>
<th>Responsible Institution (Collecting data)</th>
<th>Related institution (area of operation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. TÜİK (Turkish statistical office)</td>
<td></td>
</tr>
</tbody>
</table>

- Notes
<table>
<thead>
<tr>
<th>Suggested Indicator</th>
<th>Number of houses having access to clean water and sewage systems in forest villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linked SDG</td>
<td>Goal 6. Ensure availability and sustainable management of water and sanitation for all</td>
</tr>
<tr>
<td>Linked target</td>
<td>6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td>
</tr>
<tr>
<td>Affiliated indicator set</td>
<td>6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water</td>
</tr>
<tr>
<td>Nature/attribute</td>
<td>Qualitative: Quantitative: X</td>
</tr>
<tr>
<td>Existing data situation in relation to the indicator</td>
<td>Available (Specify source): Not available: X</td>
</tr>
<tr>
<td>What/who should be the data source and/or what should be the data collection strategy? Please specify?</td>
<td></td>
</tr>
<tr>
<td>Cycle/period</td>
<td>Once every 5 or 10 years</td>
</tr>
<tr>
<td>Responsible institution (Data collection)</td>
<td>TÜİK</td>
</tr>
<tr>
<td>Related institution</td>
<td></td>
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<tr>
<td>Notes</td>
<td></td>
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</table>
Process

Assessment and review process
Process

- Assessment and review process

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-scoring</td>
<td>133 indicators</td>
</tr>
<tr>
<td>Re-assessment</td>
<td>58 indicators (scoring less than 3.5 average)</td>
</tr>
<tr>
<td>Result of the process</td>
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</tr>
<tr>
<td>Reviewed</td>
<td>37 indicators</td>
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<tr>
<td>Removed</td>
<td>21 indicators</td>
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</tbody>
</table>

122 Indicators updated

Finally

112 Indicators
Forestry sector’s contribution in achieving SDGs - suggested indicators

<table>
<thead>
<tr>
<th>SDG</th>
<th>Number of developed indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
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<tr>
<td>3</td>
<td>12</td>
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<tr>
<td>4</td>
<td>9</td>
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<td>5</td>
<td>9</td>
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<td>6</td>
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<td>7</td>
<td>7</td>
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<td>8</td>
<td>7</td>
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<td>9</td>
<td>7</td>
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<td>10</td>
<td>6</td>
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<tr>
<td>11</td>
<td>5</td>
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<tr>
<td>12</td>
<td>4</td>
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<tr>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Number of developed indicators according to SDGs
Forestry sector’s contribution in achieving SDGs – Affiliated SDG indicators

Number of affiliated SDG indicators

153 Indicators

SDG 15: Life on Land
SDG 10: Reduced Inequalities
SDG 5: Gender Equality
SDG 1: No Poverty
SDG 11: Sustainable Cities and Communities
SDG 14: Life Below Water
SDG 3: Good Health and Well-being
SDG 6: Clean Water and Sanitation
SDG 12: Responsible Consumption and Production
SDG 8: Decent Work and Economic Growth
SDG 13: Climate Action
SDG 9: Industry, Innovation and Infrastructure
SDG 4: Quality Education
SDG 10: Reduced Inequalities
SDG 15: Life on Land
SDG 12: Responsible Consumption and Production
SDG 6: Clean Water and Sanitation
SDG 13: Climate Action
SDG 9: Industry, Innovation and Infrastructure
SDG 4: Quality Education
SDG 1: No Poverty
SDG 11: Sustainable Cities and Communities
SDG 14: Life Below Water
SDG 3: Good Health and Well-being

Number of affiliated SDG indicators
Examples

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Related Goal</th>
<th>Related Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface area (ha) selected according to conservation objectives in forests designated as nature conservation function</td>
<td>15</td>
<td>15.1</td>
</tr>
<tr>
<td>Proportion of forest areas to national land surface area (%)</td>
<td>15</td>
<td>15.1 - 15.2</td>
</tr>
<tr>
<td>Reforestation area (ha) except in steppe and maquis ecosystem areas</td>
<td>15</td>
<td>15.1 - 15.2</td>
</tr>
<tr>
<td>The proportion of rehabilitated mining areas (where mining activities stopped) within forest zones</td>
<td>15</td>
<td>15.1 / 15.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Related Goal</th>
<th>Related Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest area per inhabitant (m²/kisi) within urban zones</td>
<td>3</td>
<td>3.4 / 3.9 / 11.6</td>
</tr>
</tbody>
</table>
### Update of SFM Criteria and indicators in Turkey

<table>
<thead>
<tr>
<th>Time line</th>
<th>November 2017 – September 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drivers</strong></td>
<td></td>
</tr>
<tr>
<td>✔️ The need to address the gaps within the existing indicator sets</td>
<td></td>
</tr>
<tr>
<td>✔️ Update the system according to the built-up experience and developed data collection capacity</td>
<td></td>
</tr>
<tr>
<td>✔️ Forest Europe update process</td>
<td></td>
</tr>
<tr>
<td>✔️ Implementation of the Integrated Forest Management Project</td>
<td></td>
</tr>
<tr>
<td><strong>Working groups</strong></td>
<td>1) Forest Resources and Carbon Stock</td>
</tr>
<tr>
<td></td>
<td>2) Forests Health, Vitality and Integrity</td>
</tr>
<tr>
<td></td>
<td>3) Production Functions of Forests</td>
</tr>
<tr>
<td></td>
<td>4) Biological Diversity Function</td>
</tr>
<tr>
<td></td>
<td>5) Protective Functions of Forests</td>
</tr>
<tr>
<td></td>
<td>6) Socio-Economic Functions of Forests</td>
</tr>
<tr>
<td><strong>Result</strong></td>
<td>6 criteria and 40 indicators adapted to the Turkish context</td>
</tr>
<tr>
<td><strong>Linkage with Forestry SDG Mapping</strong></td>
<td>Assessment of the linkages between the SFM C&amp;I and SDGs</td>
</tr>
</tbody>
</table>
SDG – SFM Criteria & Indicators

SDG - SFM C&I Linkage

- SDG Target
- SFM Criteria
- SFM Indicator

Goal 1
Goal 2
Goal 3
Goal 4
Goal 5
Goal 6
Goal 7
Goal 8
Goal 9
Goal 10
Goal 11
Goal 12
Goal 13
Goal 14
Goal 15
Goal 16
Goal 17

0 5 10 15 20 25

Sixth Mediterranean Forest Week

01 April 2019 – 05 April 2019 Broumana, Lebanon
Related SDGs

1. Yoksulluğa Son
2. Açlığa Son
3. Temiz Su ve Sıhhı Koşullar
4. Erişilebilir ve Temiz Enerji
5. İnsanaya Yaksıır İş ve Ekonomik Büyüme
6. Sanayi, Yenilikçilik ve Altyapi
7. Sürdürülebilir Şehir ve Yaşam Alanları
8. Sorumlu Tüketim ve Üretim
9. İklim Eylemi
10. Karasal Yaşam
### Potential SFM C&I providing data to monitor contribution to SDGs

<table>
<thead>
<tr>
<th>C1: Forest resources and carbon stocks</th>
<th>C2: Forest Ecosystem Health and Vitality</th>
<th>C3: Productive Functions of Forests (Wood and Non-Wood)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Forest area</td>
<td>G2.1 Forests affected by natural factors</td>
<td>G3.1 Increment and production</td>
</tr>
<tr>
<td>1.2 Growing stock</td>
<td>G2.2 Silvicultural activities</td>
<td>G3.2 Non-wood products and services</td>
</tr>
<tr>
<td>1.3 Forest carbon</td>
<td>G2.3 Human induced damages</td>
<td>G3.3 Certified forests</td>
</tr>
<tr>
<td>1.5 Forest areas managed through plans</td>
<td>G2.4 Grazing damages</td>
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<tr>
<td></td>
<td>G2.5 Authorisations and allotments</td>
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<tr>
<td></td>
<td>G2.6 Air pollution and areas</td>
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<tr>
<td></td>
<td>affected by climate change</td>
<td></td>
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<tr>
<td></td>
<td>G2.7 Forest roads and facilities</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C4: Biological Diversity Functions of Forest Ecosystems</th>
<th>C5: Protective Functions in Forest (notably soil and water)</th>
<th>C6: Socio-economic Functions of Forest Ecosystems</th>
</tr>
</thead>
<tbody>
<tr>
<td>G4.1 Tree species diversity</td>
<td>G5.2 Water protection forests</td>
<td>G6.1 Contribution of forest sector to GDP</td>
</tr>
<tr>
<td>G4.2 Regeneration</td>
<td>G5.3 Natural disaster and infrastructure protection</td>
<td>G6.2 Forest products supply/demand/balance</td>
</tr>
<tr>
<td>G4.3 Naturalness</td>
<td></td>
<td>G6.3 Employment</td>
</tr>
<tr>
<td>G4.4 Introduced tree species</td>
<td></td>
<td>G6.4 Financial power of forestry</td>
</tr>
<tr>
<td>G4.5 Dead wood</td>
<td></td>
<td>G6.6 Forest dependent communities</td>
</tr>
<tr>
<td>G4.6 Genetic resources</td>
<td></td>
<td>G6.9 Research &amp; development, Education and extension</td>
</tr>
<tr>
<td>G4.8 Threatened forest species</td>
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<tr>
<td>G4.9 Protected areas</td>
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</tbody>
</table>

**VI MFW Mediterranean Forest Week**

01 April 2019 – 05 April 2019 Broumana, Lebanon
### SDG – SFM Criteria & Indicators

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: Forest resources and carbon stocks</td>
<td>4</td>
</tr>
<tr>
<td>C2: Forest Ecosystem Health and Vitality</td>
<td>7</td>
</tr>
<tr>
<td>C3: Productive Functions of Forests (Wood and Non-Wood)</td>
<td>3</td>
</tr>
<tr>
<td>C4: Biological Diversity Functions of Forest Ecosystems</td>
<td>8</td>
</tr>
<tr>
<td>C5: Protective Functions in Forest (notably soil and water)</td>
<td>2</td>
</tr>
<tr>
<td>C6: Socio-economic Functions of Forest Ecosystems</td>
<td>5</td>
</tr>
</tbody>
</table>

#### SDG - SFM C&I Linkage

<table>
<thead>
<tr>
<th>SDG Target</th>
<th>SFM Criteria</th>
<th>SFM Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Goal 2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Goal 3</td>
<td>6</td>
<td>3</td>
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<td>Goal 4</td>
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<td>Goal 5</td>
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<td>Goal 6</td>
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<td>Goal 7</td>
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<tr>
<td>Goal 8</td>
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<td>Goal 10</td>
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<tr>
<td>Goal 11</td>
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<td>Goal 12</td>
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<tr>
<td>Goal 13</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Goal 14</td>
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<td></td>
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<tr>
<td>Goal 15</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Goal 16</td>
<td>10</td>
<td></td>
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<tr>
<td>Goal 17</td>
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</tr>
</tbody>
</table>

**Legend:** SDG Target, SFM Criteria, SFM Indicator
The way forward

(Work in progress)

- A methodology created to map the SDGs within the MRV architecture
- A list of indicator to MRV the contribution of forest in achieving SDG at national level
- An updated set of SFM C&I at national scale (beyond forestry sector)
- An assessment of linkages between SFM C&I and SDGs

The way forward;
Discussion paper to move the dialogue with a wider audience
- At national level
- At international level
Thank you

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bahtiyar.kurt@undp.org