SDG Indicator 2.4.1 – Proportion of agricultural area under productive and sustainable agriculture

SAP Training Session 1
27th to 30th November 2023 in Nadi Fiji

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ESS Division (FAO)
CONCEPTUAL AND METHODOLOGICAL DEVELOPMENT OF SDG 2.4.1 (TARGET 2.4)

TIER III – 2016/2017
Methodology and data NA

- Recognition that sustainability is a multi-dimensional concept
- First draft of the methodological documents developed to support desk testing of the indicator
- In November 2017, the methodology was submitted to the IAEG-SDG

TIER II – 2018/2019
Methodology approved

- Pilot desk studies (Bangladesh, Rwanda and Mexico)
- Several revisions of the methodology → in October 2018 the IAEG-SDG reclassified the SDG 2.4.1 as Tier II
- Refinements → November 2019: final endorsed version of the SDG 2.4.1 methodology

Work to achieve TIER I
Generate data

- Development of processes and protocols to collect data backed by capacity development strategies
- Official data produced and reported by some countries (2 rounds completed in 2020/21)
- Ultimate aim is to increase international coverage of the indicator reporting to UNSD
Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

Indicator 2.4.1 (Tier II): Proportion of agricultural area under productive and sustainable agriculture

**INDICATOR’S FORMULA**

Formula:

\[ SDG \ 2.4.1 = \frac{\text{Area under productive and sustainable agriculture}}{\text{Agricultural land area}} \]

Where:

- The **denominator** _agricultural land area_ is arable land + permanent crops + permanent meadows and pastures.
- The **numerator** captures the three dimensions of sustainable agriculture: environmental, economic and social.

STEPS TO DEVELOP THE INDICATOR

1) Choosing the scale: Agriculture/farm holding level

2) Determining the scope: Crops and livestock

3) Dimensions to be covered: Economic, social and environmental

4) Selecting the themes to be covered: Total 11 themes

5) Choosing a sub-indicator: 11 sub-indicator (3 Economic, 3 social and 5 environment)

6) Developing sustainability criteria: classify the farms green, yellow and red

7) Selecting the data collection instrument(s): Farm survey

8) Deciding the periodicity of monitoring the indicator: 3 Years

9) Developing modality of reporting the indicator: Dashboard and aggregate indicator
METHODOLOGICAL PRINCIPALS

Key principles applied in developing the indicator:

• Policy relevance and “action-ability”
• Universality
• Comparability
• Measurability and cost effectiveness
• Minimum cross correlation

Impacts upon:

• Choice of sub-indicators for different dimensions
• Choice of sustainability criteria for each sub-indicator
• Level of sophistication in data collection
## SCOPE

<table>
<thead>
<tr>
<th><strong>Within scope:</strong></th>
<th><strong>Out of scope:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Holdings with primary activities:</td>
<td>• Holding focused exclusively on aquaculture and/or agro-forestry</td>
</tr>
<tr>
<td>• Crop and livestock production systems</td>
<td>• Production from gardens, backyards and hobby farms</td>
</tr>
<tr>
<td>• Secondary activities:</td>
<td>• Food harvested from the wild</td>
</tr>
<tr>
<td>• Aquaculture, to the extent if it takes place within the agricultural area as a secondary activity e.g. rice-fish and similar systems</td>
<td>• Common land not exclusively used by agriculture holding</td>
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<tr>
<td>• Agro-forestry i.e. trees on the agricultural land area of the farm</td>
<td>• Nomadic pastoralism</td>
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</table>
PERIODICITY

• Recommended periodicity of reporting is every 3-years
  o For many sub-indicators, it is likely that changes will be limited from one year to another
  o The 3-year periodicity will enable countries to have three data points on the indicator before 2030
  o Minimize data collection and reporting burden
DISSAGREGATION

Recommended disaggregation:

- Different holdings types at national level:
  - Household/non-household
  - Crops/livestock/mixed
  - Irrigate/non-irrigated

- Other stratification variables:
  - Sub-national level
  - Size of farm
  - Gender of the holder etc.
# Indicator's Framework

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Theme</th>
<th>Sub-indicator</th>
<th>Farm type</th>
<th>Reference period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic</strong></td>
<td>1. Land productivity</td>
<td>Farm output value per hectare</td>
<td>All types</td>
<td>Last calendar yr.</td>
</tr>
<tr>
<td></td>
<td>2. Profitability</td>
<td>Net farm income</td>
<td>All types</td>
<td>Last 3 calendar yrs.</td>
</tr>
<tr>
<td></td>
<td>3. Resilience</td>
<td>Risk mitigation mechanisms</td>
<td>All types</td>
<td>Last calendar yr.</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td>4. Soil health</td>
<td>Prevalence of soil degradation</td>
<td>All types</td>
<td>Last 3 calendar yrs.</td>
</tr>
<tr>
<td></td>
<td>5. Water use</td>
<td>Variation in water availability</td>
<td>All types</td>
<td>Last 3 calendar yrs.</td>
</tr>
<tr>
<td></td>
<td>6. Fertilizer risk</td>
<td>Management of fertilizers</td>
<td>All types</td>
<td>Last calendar yr.</td>
</tr>
<tr>
<td></td>
<td>7. Pesticide risk</td>
<td>Management of pesticides</td>
<td>All types</td>
<td>Last calendar yr.</td>
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<tr>
<td></td>
<td>8. Biodiversity</td>
<td>Use of agro-biodiversity supportive practices</td>
<td>All types</td>
<td>Last calendar yr.</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td>9. Decent employment</td>
<td>Wage rate in agriculture</td>
<td>Farms hiring unskilled labour</td>
<td>Last calendar yr.</td>
</tr>
<tr>
<td></td>
<td>10. Food security</td>
<td>Food Insecurity Experience Scale (FIES)</td>
<td>Household farms</td>
<td>Last 12 months</td>
</tr>
<tr>
<td></td>
<td>11. Land tenure</td>
<td>Secure tenure rights to land</td>
<td>All types</td>
<td>Last calendar yr.</td>
</tr>
</tbody>
</table>
INDICATOR LIMITATIONS

- The indicator covers only selected key aspects related to sustainable agriculture at farm level.
  - **Not covered for farm:**
    - Labour productivity
    - Pollution from pesticides
    - Energy use
    - GHG emissions
    - Burning
    - Gender equality
    - Occupational health and safety
    - Food waste
  - **Not covered beyond farm:**
    - Diversification of the national agriculture as a whole
    - Food security
    - Land concentration
    - Land-use changes
    - Quality of the agricultural outputs
    - Nutrition
    - Transportation, storage, processing, distribution and marketing
    - Sustainability of supply chain
    - Foreign trade
ASSESSING SUSTAINABILITY LEVELS

**Thresholds:** A cutoff point, reference value, benchmark, target or baseline value or range for each sub-indicators.

**Traffic light approach:**

1. **Green:** ‘desirable’
2. **Yellow:** ‘acceptable’
3. **Red:** ‘unsustainable’

- Criteria established by thematic experts, and have been fine tuned in light of results of the tests conducted in selected countries
REPORTING: DASHBOARD AND AGGREGATE INDICATOR

Example of results for country X in year Y

Most limiting theme: at least 40% of the country’s agricultural area is unsustainable.

Note: This dashboard is only a simulation and is not from real data.
AGGREGATION (AT NATIONAL OR OTHER LEVELS)

\[ SDG241_{a+d} = \min_{n:1-11} (SI_d + SI_a)_n \]

\[ SDG241_u = \max_{n:1-11} (SI_u)_n \]

SDG241_{a+d} = \text{proportion of agricultural land area that have achieved at least the \text{'acceptable'} level}

SDG241_u = \text{proportion of agricultural area that is \text{'unsustainable'}}
INDICATOR POLICY USE AND INTERPRETATION

Policy use: Dashboard and aggregate indicator

- International standard and method, provide a structured and transparent framework
- Focus on main issues and encourage discussion on how to make it more sustainable, while linking it to policy action
- Drive the policy to focus on interventions at various levels

Interpretation:

- Easy to interpret in terms of the extent to which country agriculture is far from being productive and sustainable
- Easy to identify and prioritize the areas that require intervention
THANK YOU

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SDG241-Indicator@fao.org
## MILESTONES

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>SDG process for Indicator 2.4.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>October</td>
<td>2nd meeting of IAEG-SDG: definition of sustainable agriculture and ways to measure it</td>
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<tr>
<td>2016</td>
<td>March</td>
<td>47th UN-SC endorsed SDG 2.4.1 as: ‘Proportion of agricultural area under productive and sustainable agriculture’ (Tier III)</td>
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<td></td>
<td>March-Dec</td>
<td>Literature review: building on exiting frameworks</td>
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<td></td>
<td>December</td>
<td>Technical expert meeting (FAO) – First draft methodology</td>
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<td>2017</td>
<td>February</td>
<td>First proposal submitted to GS-SAC – refinement the methodology</td>
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<td></td>
<td>April</td>
<td>Multi-stakeholder Expert Group Meeting at FAO: Drafting detailed methodology</td>
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<td></td>
<td>September</td>
<td>First Global consultation (online) with NSOs</td>
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<td></td>
<td>Oct-Dec</td>
<td>Desk tests (Kyrgyz Republic, Bangladesh, Rwanda, Ecuador, Belgium)</td>
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<td></td>
<td>November</td>
<td>6th meeting of IAEG-SDG. Requested finalizing country pilot</td>
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</tbody>
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<tr>
<td>2018</td>
<td>Jan-Mar</td>
<td>Preparation of revised methodology</td>
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<td></td>
<td>April</td>
<td>Technical workshop on learning from country desk tests</td>
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<td>May</td>
<td><strong>Second online consultation</strong> - Webinar with IAEG-SDG members.</td>
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<td>May-October</td>
<td>Country cognitive tests in Mexico, Kenya and Bangladesh</td>
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<td></td>
<td>October</td>
<td>Presented to FAO Committee on Agriculture</td>
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<td></td>
<td>November</td>
<td>8th meeting of IAEG-SDG – Upgraded as Tier II</td>
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<td>2019</td>
<td>Jan-June</td>
<td>Data collection strategy and capacity development plan submitted to UNSD</td>
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<td>Jan-Sept</td>
<td>Extended pilot tests completed in Bangladesh</td>
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<td></td>
<td>Toolkit for 2.4.1 (survey questionnaire, enumerator manual, data entry manual and scripts,</td>
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<td>calculation procedure, sampling design, e-learning etc.)</td>
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<tr>
<td></td>
<td>Jan- Oct</td>
<td>Refinements in bio-diversity sub-indicator carried out with informal group of countries –</td>
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<td>Revised proposal submitted to IAEG-SDG in Oct for endorsement, where it was accepted</td>
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<td>December</td>
<td>Pilot data collection in 45 countries using FAO 2019 Data collection questionnaire</td>
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<td>2020</td>
<td>Aug-Sept</td>
<td>First SDG 2.4.1 data collection from all member states globally</td>
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<td>Sept-Oct</td>
<td>Virtual trainings on SDG 2.4.1 targeting selected countries from various regions of the world</td>
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<td>Repeat annual data collection, analysis and dissemination cycle</td>
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