SDG INDICATOR 2.4.1
PROPORTION OF AGRICULTURAL AREA UNDER PRODUCTIVE AND SUSTAINABLE AGRICULTURE

SUBMITTED FOR TIER RECLASSIFICATION
TO THE 8TH MEETING OF IAEG-SDG

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Characteristics of Indicator 2.4.1

Indicator 2.4.1 is defined as the "Proportion of agricultural area under productive and sustainable agriculture", which is expressed by the following formula:

$$SDG2.4.1 = \frac{Area\ under\ productive\ and\ sustainable\ agriculture}{Agricultural\ land\ area}$$

- It must reflect the multiple dimensions of sustainability
- It must capture the main issues as they are expressed in the SDG target 2.4: resilience, productivity, ecosystem maintenance, adaptation to climate change and extreme events, and soils
- It must allow for the measurement of progress towards more productive and sustainable agriculture

Note: Indicator 2.4.1 is developed by FAO with the support of the Global Strategy to improve agricultural and rural statistics (GS)

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Process of development of the new methodological proposal for 2.4.1

- Literature review; **First proposal;** Expert reviews; Global country consultation (2017)**;** 6th IAEG-SDG review (2017); Desk reviews in pilot countries (2017-18)
- **New proposal;** 2nd global consultation (2018); restricted review by IAEG-SDG (July 2018); Country testing (2018)
- **New proposal further refined on the basis of the feedback received**

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Countries involved in pilots/tests

Country desk studies (2017-18)

- Bangladesh
- Kyrgyz Republic
- Ecuador
- Rwanda
- Belgium

Country testing (2018)

- Mexico
- Kenya
- France (review)
- Bangladesh (on-going)

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Main concerns raised by countries

1. ***Data integration:*** It is challenging and expensive to use different data sources from different institutions and combine them in a coordinated manner, except for countries with sophisticated data systems → need to propose a method that uses a single data source

2. ***Possibility of use of alternative existing data sources***: Countries should be authorised to use existing data sources when available

3. ***Sustainability levels:*** The approach is too restrictive as it considers only two options: sustainable/unsustainable. It does not allow to measure progress towards sustainability

4. ***Sustainability themes and sub-indicators:*** refinement of the list of themes and sub-indicators (soil health, biodiversity, fertilizers, pesticides)

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Main innovations

Description	Initial approach	New approach
Data collection instrument	A combination of multiple data sources	Farm survey as unique source, esp. for developing countries
Use of alternative data sources	Not considered	Allowed under certain conditions
Number of sub-indicators	9	11
Sustainability levels	2 levels	3 levels
Aggregation	At farm level	At regional/country level
Reporting	One single aggregate indicator	Dashboard + aggregate indicator

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New sub-indicators

	Initial version		New version	
No.	**Theme**	**Sub-indicators**	**Theme**	**Sub-indicators**
1	Land productivity	Farm output value per farm agricultural area	Land productivity	Farm output value per hectare
2	Farm profitability	Net farm income	Profitability	Net farm income
3	Financial Resilience	Access to financial services	Resilience	Risk mitigation mechanisms
4	Soil health	Soil health	Soil health	Prevalence of soil degradation
5	Water health	Water use	Water use	Variation in water availability
6		Water quality	Fertilizer risk	Management of fertilizers
7			Pesticide risk	Management of pesticides
8	Biodiversity	Heterogeneity of agricultural landscape	Biodiversity	Use of biodiversity-supportive practices
9	Decent work	Wage rate in agriculture	Decent employment	Wage rate in agriculture
10	Well-being	Agricultural household income	Food security	Food insecurity experience scale (FIES)
11	Access to land	Secure rights to land tenure	Land tenure	Secure tenure rights to land

Note: innovations are indicated in red

Data collection instrument

- **Farm survey as the preferred instrument** for data collection: aligned with efforts to develop farm surveys as the most relevant instrument for collecting agricultural data (AGRIS survey programme; 50X2030 initiative)
- **Questionnaire** designed as a set of **modules** that contain the minimum number of questions needed to assess the different themes/sub-indicators of SDG 2.4.1.
- Each module (or the entire questionnaire) can be **integrated into existing farm surveys**

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Use of alternative data sources

No.	Sub-indicator	Admin data	Ag/livestock census	Ag surveys	Env. monitoring systems	GIS/remote sensing	Household surveys	Other
1	Farm output value per hectare		X	X		X	X	
2	Net farm income		X	X			X	
3	Risk mitigation mechanisms	X					X	X
4	Prevalence of soil degradation				X	X		
5	Variation in water availability	X			X	X		X
6	Management of fertilizers	X		X	X	X		
7	Management of pesticides	X		X	X			X
8	Use of biodiversity-supportive practices				X	X		
9	Wage rate in agriculture	X					X	X
10	Food insecurity experience scale (FIES)						X	X
11	Secure tenure rights to land	X					X	

Note: Environmental monitoring systems include soil sampling, river flows records, and groundwater abstraction records. GIS/RS includes models.

Conditions for using alternative data sources

- Captures the same phenomenon as the proposed farm survey
- Data quality not lower than the farm survey
- Compliant with international standards and international classifications systems
- Data available at the same level of territorial disaggregation as the farm survey
- Reference year and periodicity homogenous across the sub-indicators

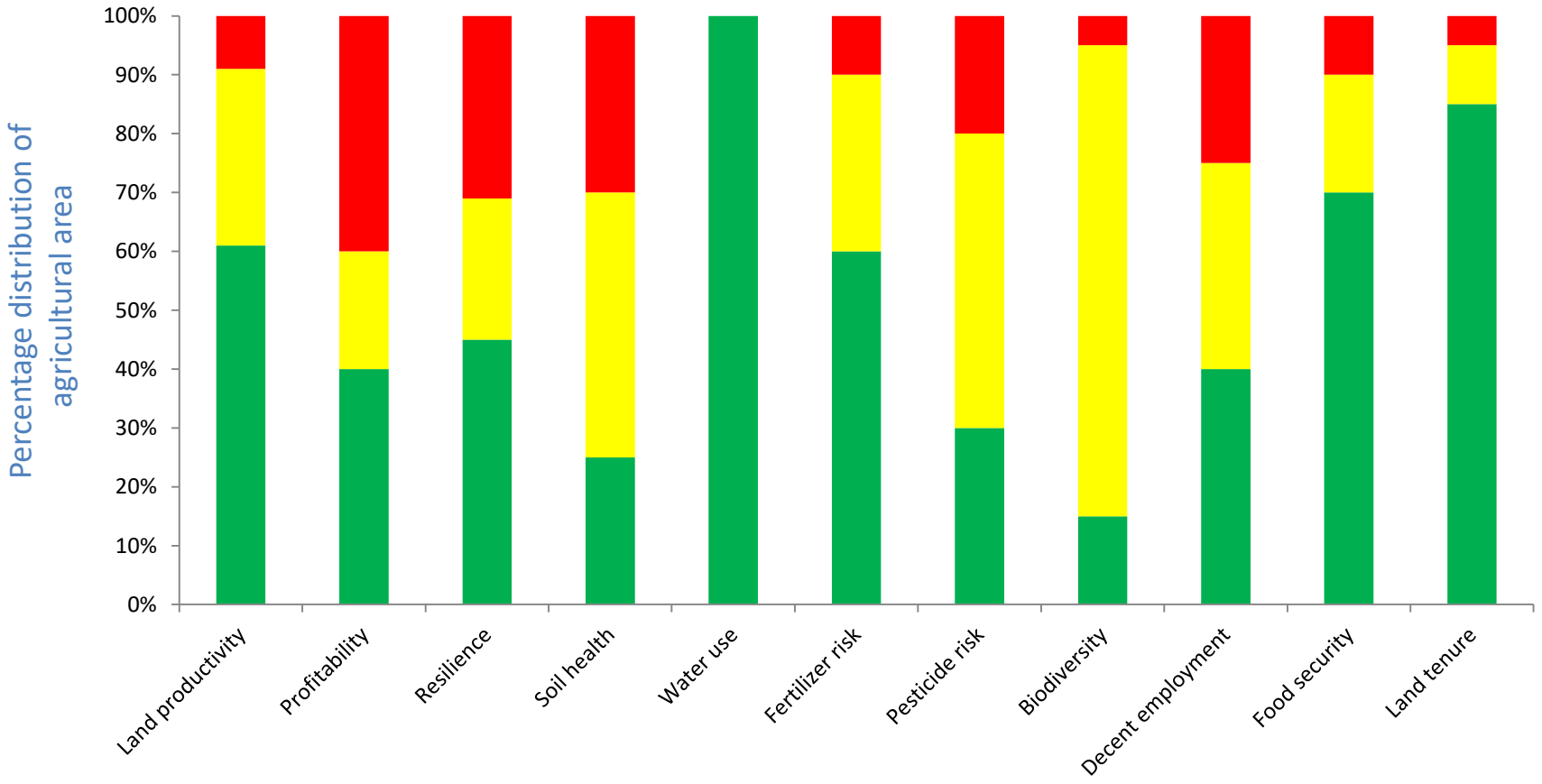
Assessing sustainability levels

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

- 3 levels of sustainability help capture progress over time
- Assessed for each sub-indicator at the level of the farm holding
- Dashboard shows trade-offs between sustainability dimensions and the need to find an acceptable balance between them

Reporting through a dashboard

Example of results for country X in year Y



Note: This dashboard is only a simulation and is not from real data

Aggregation (at national or other levels)

$$SDG241_d = \min_{n:1-11}(SI_{d\,n})$$

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

$$SDG241_u = \max_{n:1-11}(SI_{u\,n}) = 1 - SDG241_{a+d}$$

- $SDG241_d$ = proportion of agricultural land area that have achieved the 'desirable' level
- $SDG241_{a+d}$ = proportion of agricultural land area that have achieved at least the 'acceptable' level
- $SDG241_u$ = proportion of agricultural area that is 'unsustainable'

Thank You