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# COMMITTEE ON AGRICULTURE

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# MEASURING PROGRESS TOWARDS PRODUCTIVE AND SUSTAINABLE AGRICULTURE UNDER THE 2030 AGENDA[1]

[1] This note is based on the following document, currently being submitted for approval to the Inter-Agency and Expert Group on SDG: "SDG Indicator 2.4.1. Proportion of agricultural area under productive and sustainable agriculture. Methodological Note. Second Revision. Rome, August 2018".

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## 1. Introduction

In September 2015, the United Nations General Assembly adopted the 2030 Development Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). The SDGs are accompanied by 169 targets under the various goals and a set of 232 unique indicators to monitor progress toward achieving these targets.

Target 2.4 is one of eight targets under SDG 2: "End hunger; achieve food security and improved nutrition and promote sustainable agriculture". Specifically, Target 2.4 aims to ***"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."***

The global official indicator to monitor target 2.4 has not yet been established. FAO has been working over the last 3 years in close consultation with international experts and representatives of FAO Member countries to develop and test an internationally agreed methodology.

This note comes in support to the COAG agenda item on "Sustainable pathways to engage food and agriculture for the achievement of the 2030 Agenda for Sustainable Development" and the accompanying document. It provides additional information on the monitoring of SDGs, presents the on-going process put in place by FAO for the methodological development of SDG indicator 2.4.1 **"Proportion of agricultural area under productive and sustainable agriculture"** and discusses conceptual and methodological issues associated with the development of this indicator. The methodology is still under review and has not yet been approved by the IAEG-SDG. The final methodology document may therefore differ from the one presented in this note.

COAG members are invited to take note of the on-going process to develop an indicator on productive and sustainable agriculture, provide comments to FAO on the methodology for SDG 2.4.1, and support its adoption as the international standard for measuring sustainable agriculture.

## 2. The SDG indicator development process

The follow-up and review mechanism put in place for the implementation of the 2030 Agenda is based on a framework of indicators and statistical data to monitor progress, inform policy and ensure accountability of all stakeholders.

The UN Statistics Commission (UNSC) is responsible for coordinating the substantive and technical work to develop international statistical standards, methods and guidelines to implement the global SDG indicator framework. The Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) was created by the UNSC on 6 March 2015 and was tasked to develop and implement the global indicator framework for the goals and targets of the 2030 Agenda[2]. It is composed of Member States (representatives from National Statistics Offices, NSOs) and includes regional and international agencies as observers. As part of its mandate, the IAEG-SDG meets regularly to review progress by custodian agencies in developing SDG indicators and decides on Tier upgrade.

The global indicator framework developed by the IAEG-SDGs and endorsed by the Statistical Commission was subsequently adopted by the UN General Assembly on 6 July 2017 through resolution 71/313[3]. The resolution indicates that the global indicator framework is a voluntary and country-led instrument that can be complemented by indicators at the regional and national levels developed by Member States.

The approved global SDG indicators are classified in three Tiers according to their level of methodological development and data availability. Some of the indicators are based on established methods and have widespread data coverage (Tier I). Others have established methods but limited data

[2] https://unstats.un.org/sdgs/iaeg-sdgs/

[3] UN General Assembly. 71st session. Resolution adopted by the General Assembly on 6 July 2017. 71/313. Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development. 10 July 2017.

coverage (Tier II). For some indicators agreed definitions and methods still need to be developed (Tier III). The indicator for productive and sustainable agriculture (SDG 2.4.1), monitoring progress towards achieving Target 2.4 currently falls under the Tier III category.

The GA Resolution requests the UN Statistical Commission, through the IAEG-SDGs, continue to refine and improve the global indicator framework in order to address its current limitations in terms of coverage, alignment with targets, definitions and development of metadata, including through the periodic review of new methodologies and data as they become available. In addition to the annual refinement, a comprehensive review of the global indicator framework will be conducted by the Commission at its fifty-first session in 2020 and its fifty-sixth session in 2025.

Under the auspices of the IAEG-SDG, various international agencies, including FAO, were assigned the responsibility of *custodianship* for the methodological development of the SDG indicators, the co-ordination of data collection, the provision of technical assistance and global reporting. FAO was identified as the custodian agency of 21 indicators that span across six goals, of which one is SDG 2.4.1. It is also a contributing agency for an additional four indicators.

## 3. Process for developing SDG indicator 2.4.1

FAO, in collaboration with the Global Strategy to improve Agricultural and Rural Statistics (GSARS) has worked through 2016 - 2018 to establish a methodology to measure progress towards achieving Target 2.4. A two-page concept note was endorsed by the IAEG-SDG in March 2016. The concept note described, in broad terms, an approach to the establishment of this indicator that acknowledges the multidimensional aspect of sustainability, and proposed the farm holding as measurement unit.

Throughout 2016, research focused on literature review on existing frameworks and methods for measuring and monitoring sustainable agriculture[4]. A key aspect of all approaches to measuring sustainable agriculture is the recognition that sustainability is a multi-dimensional concept, and that these multiple dimensions need to be reflected in the construction of the indicator. This implies that SDG indicator 2.4.1 must be based on a set of sub-indicators that cover these three dimensions.

Several consultations were organized to develop and refine the methodology. They included: a technical meeting in December 2016 to establish priority areas for measurement; submission to the 2017 meeting of the Scientific Advisory Committee (SAC) of the GSARS; and an Expert Group Meeting (EGM) held in Rome from 3-5 April, 2017. The EGM gathered agriculture statisticians from eight countries all regions, civil society and private sector representatives, as well as thematic experts from academia and from FAO Technical Departments. The purpose of the EGM was to review the draft methodology and to provide guidance on the approach, the dimensions, themes and sub-indicators[5] offered for discussion, as well as the modalities to construct SDG indicator 2.4.1.

A key aspect in the development of the method was the selection of relevant themes, sub-indicators and the sustainability criteria for each sub-indicator. Following the EGM, detailed descriptions of methods for sub-indicators across all three dimensions of sustainability – economic, environmental and social – were developed. In October 2017, the methodological documents were submitted to an online global consultation, inviting all National Offices in charge of agricultural statistics to provide their comments. In November 2017, the methodology was submitted to the IAEG-SDG at its 6th meeting in Bahrain, who provided a series of comments on the approach and methodology.

Pilot desk studies were carried out in Bangladesh, Ecuador, the Kyrgyz Republic and Rwanda during the last quarter of 2017, and in Belgium in early 2018. In April 2018, participants from the five pilot

[4] Hayati, D. 2017. A Literature Review on Frameworks and Methods for Measuring and Monitoring Sustainable Agriculture. Technical Report n.22. Global Strategy Technical Report: Rome.

[5] Themes are defined as specific aspects under a given sustainability dimension, to be measured through a sub-indicator. Sustainability criteria are values against which the performance of each sub-indicator is assessed to classify the farm in terms of the sustainability level.

countries gathered at a technical meeting at FAO with the team in charge of SDG 2.4.1 development to discuss the results of their desk studies and to work out modifications to the methodological document.

The methodological note was updated in order to address the issues identified through the above processes. A revised version of the methodology was shared with the members of the IAEG-SDG through webinars organized in May 2018. Member countries were then invited to provide their comments in writing. All country contributions were then analyzed and integrated into a second revision.

This note presents the main elements of the document "SDG Indicator 2.4.1: Proportion of agricultural area under productive and sustainable agriculture. Methodological Note. Second Revision. Rome, August 2018". After a second round of country testing, the methodological note will be submitted for tier reclassification at the 8th IAEG-SDG meeting in November 2018. Until then, the methodology is still under review and is subject to change until final approval as Tier II.

## 4. Methodology for constructing SDG indicator 2.4.1

The concept note endorsed by the IAEG-SDG defines the SDG indicator 2.4.1 as "Proportion of agricultural area under productive and sustainable agriculture".

In order to respect the priorities expressed in SDG Target 2.4, the indicator must capture issues related to resilience, productivity, ecosystem maintenance, adaptation to climate change and extreme events, and soils.

The formulation of the concept note also implies that an agricultural area must be classified as either sustainable or unsustainable. This is a conceptual challenge, as all literature on sustainable agriculture stresses the need to look at sustainability in relative rather than absolute terms, thus avoiding using a simplistic binary (sustainable/unsustainable) approach.

**Measurement scope: the focus is on agricultural production**

SDG indicator 2.4.1 focuses on agricultural land, and therefore primarily on land that is used to grow crops and raise livestock. Using the agricultural holding (farm) as a unit helps defining the scope of the indicator in terms of activities and areas. Included within the scope are all types of agricultural production systems, including both intensive and extensive production systems, and subsistence agriculture. In terms of activities the indicator considers food and non-food crops and livestock products, and crops grown for fodder or for energy purposes. Agro-forestry (trees on the farm) and aquaculture are also considered to the extent that they are part of the production systems, and as long as they are not the main economic activity of the holding. Instead, the following are not considered in the calculation of the indicator: nomadic pastoralism; production from gardens and backyards; production from hobby farms.

From an environmental perspective, the scope of the indicator focuses on the environmental impacts of farming, i.e. the direct impacts that farming practices, farmer choices and farming methods have on the environment. This implies that all possible impacts that are beyond this scope are not considered.

From a social perspective, the approach focuses on farming as a source of livelihood. Thus, the social impact of farming activities in terms of household livelihood and food security is included. Access to productive resources, including land, is considered, as it impacts directly the performances of agriculture, but access to basic services, for instance (water, education, health care) for farm households is considered outside of the scope of the assessment.

In terms of agricultural value chain, the scope of the assessment is limited to the farm gate. It does not extend to the sustainability of the transportation, storage, processing, distribution and marketing of agricultural products although it is accepted that the efficiency and effectiveness of the delivery of these services may significantly affect the food value chain. Of particular relevance here is the issue of food waste, which, for varying reasons depending on the country, is likely to be a significant issue in the assessment of sustainable provision of food. SDG 12 addresses the issue of sustainable consumption and production and specific indicators exist to capture food waste and losses. Likewise, the proposed

approach does not take into consideration the sustainability of supply chains that provide inputs to agricultural production (seeds, chemicals, etc.) unless it is reflected in terms of farm performances.

Finally, the impacts of agricultural production systems on the health of end-consumers and their dietary outcomes (except for the farm household itself) is outside the scope of the indicator.

**Data collection instrument**

Different data are collected through different instruments. Often, environmental data are collected through environmental monitoring systems or remote sensing. Yet many countries do not have the capacity or resources to do so, and therefore these data are sparse or non-existent. In order to propose a manageable and cost-effective solution, a requirement stressed by several countries during the consultations, the methodology offers a single data collection instrument for all sub-indicators: the farm survey. In addition, it offers the possibility of using a combination of different data sources and instruments as an alternative option for those countries wishing to do so.

The decision to use a farm survey (i.e. interviewing the farmer through the use of a questionnaire) has implications on the type of information that can be obtained in order to cover the different dimensions of sustainability. While farm surveys are well suited to measure the economic dimension of sustainability, they are not ideal tool for measuring environmental and social sustainability dimensions.

Typically, environmental impacts of agriculture are measured through monitoring systems like remote sensing, soil and water sampling, or other tools associated with a specific area, rather than with a single agricultural holding. For several environmental themes, it is unlikely that farmers would be able to assess the environmental impact of their farming practices. Using a farm survey instrument instead of environmental monitoring systems therefore implies moving from measuring outcome/impact to assessing farmers' awareness and behavior.

The sub-themes under the social dimension are usually best captured through household surveys. While in the majority of cases agricultural holdings are closely associated with a given household, this is not always the case, and therefore capturing the social dimension of sustainability through a farm survey poses certain challenges.

**Selecting themes**

The key considerations in the selection of themes are policy relevance and measurability. Following this approach, only sub-indicators that are responsive to farm level policies aimed at improving agricultural sustainability are considered. In terms of measurability, only a "core" set of themes and sub-indicators for which measurement and reporting is expected in the majority of countries are selected.

The literature review identified a large number of potential sustainability themes across the three dimensions of sustainability and, for each theme, usually a large number of possible sub-indicators. From an operational point of view, it is impossible to consider all of them while keeping the process manageable and universally valid. A core set of 11 themes and sub-indicators has been selected and are presented below. Countries may consider including additional themes to ensure that their national indicator for sustainable agriculture is relevant for national policy-making (in line with the resolution of the UN General Assembly), but for the sake of SDG reporting, and to ensure international coherence, they are requested to report on SDG indicator 2.4.1 by using the core set of 11 sub-indicators.

**Selecting sub-indicators**

In selecting the sub-indicators for SDG indicator 2.4.1 the following six key criteria have been considered: policy relevance (the indicator must be easily understood and the results easily interpreted by policy makers); universality (the indicator must be relevant for a large range of countries and geographical contexts, both in developing and developed countries); international comparability; measurability; cost-effectiveness; and minimum cross-correlation between sub-indicators.

Sub-indicators may be of five types:

- *Impact/outcome* indicators that record the state or change in state of environmental, economic and social factors.
- *Awareness* indicators record the level of awareness and knowledge of interviewed persons in relation with a given sustainability issue. Awareness is considered a first step towards addressing sustainability issues.
- *Behavior* indicators that capture peoples' attitudes in relation to a given sustainability issue. While behavior is influenced by awareness, the two can also be disconnected.
- *Practice* indicators that measure specific and codified agricultural methods applied on a farm.
- *Perception* indicators that record peoples' views about a specific issue.

Impact/outcome indicators should be the preferred focus of measurement: if an outcome can be measured, it is the most objective way to measure performances in relation with a given sustainability theme. In the absence of the possibility to measure outcomes, capturing awareness and behavior through carefully crafted questions, can be considered acceptable proxies to assess sustainability performances.

In general, measuring sustainability performances through farm practices presents several challenges. The impact of a given practice often varies from one place to another, and from one farm type to another, and what can be considered sustainable in one setting may not be suitable in another. Care should be taken, therefore, when proposing indicators on practices to ensure that they are universally relevant in relation with the sustainability issue they are meant to address.

Perception indicators should be used carefully and are not considered to be amenable to the measurement of many sustainability themes as they introduce an excessive level of subjectivity.

The 11 themes and sub-indicators listed in Table 1 were selected through a series of consultations, and on the basis of the above criteria.

**Table 1: List of themes and sub-indicators**

| No. | Dimension | Theme | Sub-indicator |
|---|---|---|---|
| 1 | Economic | Land productivity | Farm output value per hectare |
| 2 | | Profitability | Net farm income |
| 3 | | Resilience | Risk mitigation mechanisms |
| 4 | Environmental | Soil health | Prevalence of soil degradation |
| 5 | | Water use | Variation in water availability |
| 6 | | Fertilizer pollution risk | Management of fertilizers |
| 7 | | Pesticide risk | Management of pesticides |
| 8 | | Biodiversity | Use of biodiversity-supportive practices |
| 9 | Social | Decent employment | Wage rate in agriculture |
| 10 | | Food security | Food insecurity experience scale (FIES) |
| 11 | | Land tenure | Secure tenure rights to land |

**Assessing sustainability performance for each sub-indicator**

The concept of sustainability implies an idea of continuous progress and improvement across theme. In order to capture the concept of continuous progress towards sustainability, a 'traffic light' approach has been developed, in which three sustainability levels are considered for each sub-indicator:

- Green: desirable
- Yellow: acceptable
- Red: unsustainable.

While a certain level of subjectivity is unavoidable in setting the criteria associated with these categories, this approach allows identification, for each theme, of conditions of critical unsustainability (red), conditions that can be considered 'ideal' (green) and, in between, intermediate conditions that are considered 'acceptable' but would need to be scrutinized in terms of possible improvements (yellow). It also acknowledges the trade-offs existing between sustainability dimensions and themes, and the need to find an acceptable balance between them.

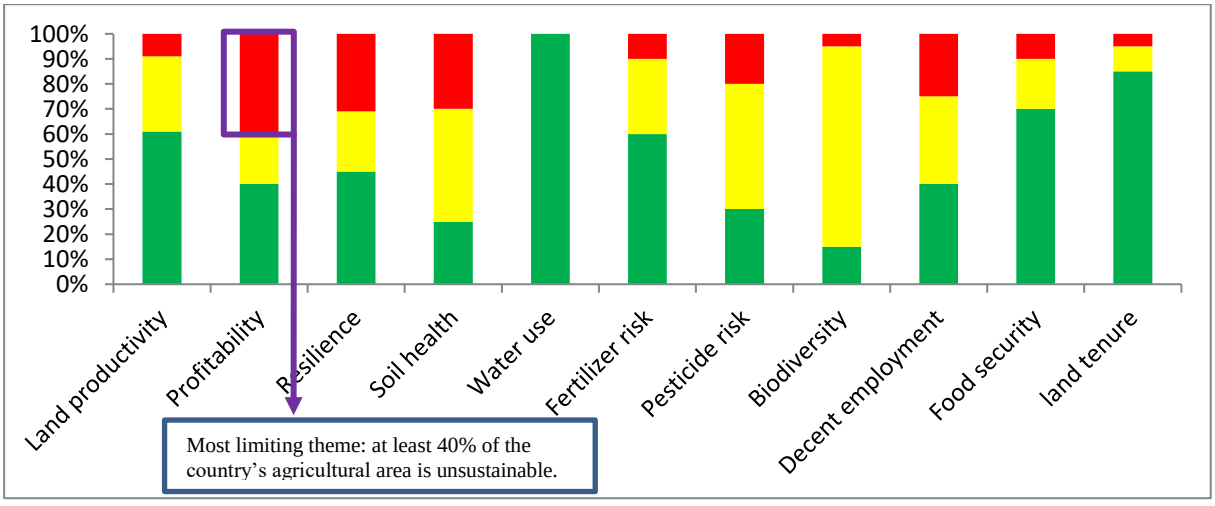
**Progress towards sustainable agriculture: managing trade-offs across sustainability objectives**

Achieving sustainable agriculture is a progressive process of identifying and striking a balance between agriculture's social, economic and environmental objectives. This process reflects the evolution of society's knowledge which has an impact on how sustainability goals and priorities are set in practices. Assessment of agricultural sustainability must therefore be seen as a dynamic process subject to periodic revisions. The traffic light approach helps defining the 'hard boundaries' of unsustainability for each theme, as well as desirable conditions, helping to assess trade-offs across the different sustainability themes. The criteria proposed in this methodology reflect current level of knowledge and broad consensus on sustainability conditions and practices for each sub-indicator. They should be revised periodically to reflect progressive changes in knowledge.

## Reporting through a dashboard

The final step in the sustainability assessment process is to report the results at national level. The methodology proposes to focus on a dashboard presenting the different sub-indicators separately. For each sub-indicator, aggregation at national level is done by summing the agricultural land area of all agricultural holdings by sustainability category (red, yellow or green), and reported as percentage of the total agricultural land area of the country.

The dashboard offers several advantages, including the possibility of combining data from different sources, and clarity about the main unsustainability issues: countries can easily visualize their performance in terms of the different sustainability dimensions and themes, and understand where policy efforts should be focused (see example).




**Example of dashboard for SDG Indicator 2.4.1**

## Computing SDG indicator 2.4.1 from the dashboard

The concept note endorsed by the IAEG-SDG indicates that the sub-indicators are to be aggregated so as to be able to report progress towards sustainable agricultural at country level through a single value.

In many cases, computing an indicator from a set of sub-indicators is done through the development of an index calculated as an average, or weighted average, of the different sub-indicators. This is not appropriate for SDG indicator 2.4.1 as it would not reflect the need to find an acceptable balance between the different themes. In order to stress the importance of reducing the share of agricultural land considered 'unsustainable', SDG indicator 2.4.1 is calculated by identifying amongst all sub-indicators the one that has the highest level of unsustainability (red) at the country level (see example above). That sub-indicator defines the level of sustainability of agriculture in a given country.

**Use of alternative data sources to construct the indicator**

Several countries have suggested using existing data sources or alternative data sources on the grounds that these instruments can be more cost-effective and sometimes provide more reliable results than farm surveys. These instruments include remote sensing, GIS, models, agricultural surveys, household surveys, administrative data or environmental monitoring systems. The methodology note considers the possibility to use such instruments, subject to a series of criteria to ensure data quality and international comparability. Other data sources may also be used to complement and/or validate farm survey results.

The methodology note also recommends that countries complement the farm survey with a monitoring system that can measure the impact of agriculture on the environment (soil, water, fertilizer and pesticide pollution, biodiversity) and on health (pesticides residues in food and human bodies). This will provide additional information and help crosscheck the robustness of SDG indicator 2.4.1 with regard to the environmental dimension of sustainability.

# Annex: Short description of the 11 sub-indicators

**Theme 1:** Land Productivity **Sub-indicator:** Farm output value per hectare

Land productivity is a measure of agricultural value of outputs obtained on a given area of land. Maintaining or improving the output over time relative to the area of land used is an important aspect in sustainability for a range of reasons. At farm level, the land productivity reflects technology and production processes for given agro-ecological conditions. In a broader sense, an increase in the level of land productivity enables higher production while reducing pressure on increasingly scarce land resources, commonly linked to deforestation and associated losses of ecosystem services and biodiversity.

The sub-indicator is described as farm output value per hectare (crops and livestock).

**Theme 2:** Profitability **Sub-indicator:** Net Farm Income

An important element of sustainability in agriculture is the economic viability of the farm, driven to a large extent by its profitability. Profitability is measured using the net income that the farmer is able to gain from farming operations. Availability and use of information on farm economic performance, measured using profitability, will support better decision making both at micro and macro-economic level. Since performance measures drive behaviour, better information on performance can alter behaviour and decision-making by government and producers both in household and non-household agriculture.

The sub-indicator measures profitability over a 3-year period.

**Theme 3:** Resilience **Sub-indicator:** Risk mitigation mechanisms

Resilience encompasses absorptive, anticipatory and adaptive capacities and refers to the properties of a system that allows farms to deal with shocks and stresses, to persist and to continue to be well-functioning (in the sense of providing stability, predictable rules, security and other benefits to its members).

The sub-indicator measures whether the farm holding avails of the following risk mitigation mechanisms: access to credit; access to insurance; on farm diversification

**Theme 4:** Soil health **Sub-indicator:** Prevalence of soil degradation

Many of the processes affecting soil health are associated with agricultural practices. The farm survey focuses on four main threats to soil health: soil erosion; reduction in soil fertility; salinization and waterlogging. It captures farmer's knowledge about the situation of the agricultural holding in terms of soil degradation. Experience has shown that farmers are very much aware of the state of their soils, health and degradation level. Farmers may also be offered the opportunity to mention other threats than the above four.

The sub-indicator measures the extent of the above four threats in terms of percentage of agricultural area affected.

**Theme 5**: Water use **Sub-indicator:** Variation in water availability

Agriculture, more specifically irrigated agriculture, is by far the main economic sector using freshwater resources. In many places, water withdrawal from rivers and groundwater aquifers is beyond what can be considered environmentally sustainable. This affects both rivers and underground aquifers.

Sustainable agriculture therefore requires that that level of use of freshwater for irrigation remains within acceptable boundaries. While there is no internationally agreed standards of water use sustainability, signals associated with unsustainable use of water typically include progressive reduction in the level of groundwater, drying out of springs and rivers, increased conflicts among water users.

The sub-indicator measures farmers' awareness and behaviour in relation with water and the effectiveness of institutional set-up for water allocation.

**Theme 6:** Fertilizer pollution risk **Sub-indicator:** Management of fertilizers

Agriculture can affect the quality of the environment through excessive use or inadequate management of fertilizers. Sustainable agriculture implies that the level of chemicals in soil and water bodies remains within acceptable thresholds. Integrated plant nutrient management considers all sources of nutrients (mineral and organic) and their management in order to obtain best nutrient balance[6]. Measuring soil and water quality captures the extent and causes of pollution, but establishing monitoring systems of soil and water is costly and not always feasible in countries.

The sub-indicator measures the level of awareness of farmers about the environmental risks associated with fertilizers (including mineral or synthetic fertilizers and manure), and their behavior in terms of fertilizer and manure management, through a list of management measures that help reducing pollution risk.

**Theme 7:** Pesticide risk **Sub-indicator:** Management of pesticides

Pesticides are important inputs in modern agriculture (both for crops and livestock), but if not well managed they can cause harm to people's health or to the environment. Practices associated with integrated pest management contribute to minimising risks associated with the use of pesticides and limit their impact on human health and on the environment.

The sub-indicator measures the level of awareness of farmers about the health and environmental risks associated with the use of pesticides on the farms, the type of pesticide used and the type of measure(s) taken to mitigate the associated risks.

**Theme 8:** Biodiversity **Sub-indicator:** Use of biodiversity-supportive practices

The Convention on Biological Diversity (CBD) stresses the close relationship between agriculture activities and biodiversity, considering three levels of biodiversity: genetic level diversity; agrobiodiversity at production system level; and ecosystem level (wild) biodiversity. The way agriculture is practiced influences all three levels. In view of the complex interactions between agriculture and biodiversity, attempts to develop indicators of biodiversity for agriculture usually consider a large number of sub-indicator, with no universally agreed sustainability criteria. Considering these constraints, the focus is on a sub-indicator that captures efforts towards more biodiversity-friendly agriculture, by identifying a limited list of practices that are considered conducive to biodiversity conservation.

This sub-indicator measures the level of adoption of biodiversity-supportive practices by the farm at ecosystem, species and genetic levels, addressing both crops and livestock.

**Theme 9:** Decent employment **Sub-indicator:** Wage rate in agriculture

[6] Note: the management of plant nutrients addresses two sustainability issues: avoiding pollution, and maintaining a good level of soil fertility. This sub-indicator addresses the first issue, while the second one is addressed under sub-indicator 4 'Soil health'.

The theme provides information on the level of remuneration of employees working for the farm. It informs about economic risks faced by unskilled workers in terms of remuneration received, the later benchmarked against the minimum wage set at national level in the agricultural sector. This sub-indicator allows distinguishing between holdings that pay a fair remuneration to all employees under the elementary occupation group, and agricultural holdings paying a remuneration that is below the minimum wage standard.

The sub-indicator measures farm unskilled labour daily wage rate.

**Theme 10:** Food security **Sub-indicator:** Food Insecurity Experience Scale (FIES)

For many farms across the world, farming is an activity closely related to food security. Measuring food security at the level of the farm household is therefore a good measure on how farming activities provide farmers with the conditions to ensure food security for the household. The Food Insecurity Experience Scale (FIES) is SDG indicator 2.1.2 (a Tier 1 indicator). It produces a measure of the severity of food insecurity experienced by individuals or households, based on direct interviews. Contextualised for a population of farm households, it informs on the level of food insecurity in the agriculture community.

The sub-indicator measures the level of food insecurity on the basis of eight questions that cover three domains: uncertainty/anxiety, changes in food quantity, and changes in food quality.

**Dimension:** Social

**Theme 11:** Land tenure **Sub-indicator:** Secure tenure rights to land

Evidence shows that farmers tend to be more productive if they have secure access to and control of economic resources and services, particularly land. Secure access to a key resources as land help ensure equitable economic growth, contributes to economic efficiency and has a positive impact on key the welfare of agricultural households. This sub-indicator is SDG indicator 5.a.1., contextualised for a farm survey.

The sub-indicator measures the level of tenure security for the farm holding’s agricultural land through a set of 8 questions.