

# Common Indicators for Coffee Sustainability



## Guidelines & Key Information

This sheet displays the initial basic Indicators for farm-level coffee sustainability, as originally determined by the GCP and the SPF Indicator Working Group. COSA—with feedback from the members of the Global Expert Committee—developed and synthesized practical metrics to operationalize the indicators so they can be functional across origins and comparable over time. The approach builds on global experience refined with tens of thousands of surveys and the expertise of the Committee members.

### Data Privacy

In the framework for this project, no data will be shared. However, it lays the ground for the potential to exchange data and making it easier to do so if needed, be it between business partners, or for sending information to a sustainability standard, etc. The project's underlying philosophy is that every party has sovereignty over their own data, and is not obligated to share it.

### Impact vs. Monitoring Data

The following indicator approaches are built on a Monitoring methodology and not a Full Impact approach. The Monitoring approach generally relies on farmer recall of the most recent production year and reasonable local estimates that can provide good enough information in a simple way. This can facilitate wide adoption and use without the burden of full accounting which can be onerous for some organizations and farmers. Full Impact approaches can be used where desired and is in many cases compatible as it provides more accurate information, but requires more investment and time in detailed record keeping, accounting, and data gathering skills.

Sustainability Monitoring (through farmer surveys) usually relies on a single farmer's response per household—usually the head of household. The head of household can be any one person in the household, but is generally the farm owner or main decision maker. To track activities or other engagements provided to farmers through programs or initiatives, an organization may wish to capture additional information on multiple individuals in a household where relevant (e.g., all training or service recipients). COSA has a separate protocol for this type of producer and household identification and tracking and can provide that to interested organizations.

### Producer Sampling Guidelines

1. Representativeness: While sampling all farmers in a target group (census) is ideal, sampling a portion of farmers can be appropriate if the farmers selected for the survey are representative of the target population as a whole. Being aware of the homogeneity of the farmer population is important as well as individual farmer locations. The ideal approach would be a simple random sample where the appropriate number of farmers are randomly selected from a list and surveyors go to that list of farms to conduct the surveys. COSA has a Sample Size calculator built for Monitoring applications specifically.
2. Accuracy of farmer recall (memory) diminishes significantly beyond one year, so try only to ask about the last production cycle. It is also optimal to visit farmers soon after the main harvest period (and ideally at approximately the same time each year). It is important to ask questions as close to the end of the last production year as possible to ensure that the full production and harvest cycle is included in the response. The production year refers to the end of the last harvest to the end of the corresponding harvest before that (12 month period).
3. Try to talk to the head of household for each farm (different people may give you different perspectives but typically the decision-makers will yield the most accurate results).
4. Quality checks in the first week of a surveyor's work can also make a big difference; make sure surveyors stick to the specific questions as written.

### Certification & Audit Data

Some of the indicator data below may be covered in Audits or through other Compliance inquiries. If an entity wishes to use that data to report on the indicator framework, please be aware of the following:

1. Compliance and audit data is usually collected on a much smaller sample of farmers than typical Monitoring approaches (audit sampling typically relies on square root sampling instead of a large enough population to ensure statistically sound results). This means that audit data may not be representative of the whole population.
2. Compliance data typically gives the user a binary result on a single topic, i.e., whether a certain condition was met or not. It does not usually convey the *degree* to which a certain condition was met, nor can it be used to see incremental change over time. Therefore, to achieve more control over the supply chain and improve the ability to remedy significant issues, it is strongly recommended to use the SMART indicator approaches detailed below (in fact, the approaches below could be built into an organization's Compliance assessment tools).

Dimension	Indicator Topics	Description (Metrology)	Approach & Rationale
General	Farm and Farmer Characteristics	Unique Farmer ID	Each producer should have a unique ID. Optimally this can be a national ID, but in its absence a buyer ID, project ID or other unique number can serve. It is important to keep in mind that various entities may have access to reported data, so confidential information should not be included in the shared record (e.g. Social Security number).
		First and Last name	First and last name(s) of the farmer surveyed should be collected in separate fields/columns to ensure consistency (avoiding confusion between Carlos de la Huerta and De la Huerta, Carlos). Initials should be avoided when possible. In places where farmers use only one name (a family name), that name should be entered as the Last Name and an appropriate prefix or "Farmer" could be entered as the First Name.
		Year of birth	Best practice is to use 'Year of Birth' as opposed to age. Age has to be updated annually, but year of birth is the same indefinitely, and can be used to calculate age at any point.
		Gender	Response choices should include these four: Female, Male, Other, Prefer not to say
		Total farm size & Total Area planted in Coffee	<p>Total Farm size refers to total property size, including land used to grow crops, pasture, wooded areas, land covered by buildings, and any other area included in the property. Best practice is to collect response in any given unit, and then perform conversion to a standard international unit (ha). Data validation should ensure that the total area planted in coffee should be less than the total farm size. It is ok to rely on farmer recall although more rigorous estimates will include GPS or polygonal mapping data. Consider that farms may contain multiple plots (plots are farm land areas that are not connected, or farm areas that are managed differently, or both). Make sure to add all relevant plots managed by members of a household together (that is, the farm area should coincide with the land used to account for the farm cost and revenue data being reported).</p> <p>Area under coffee production can also be triangulated with other pieces of data collected (e.g., trees planted per unit land (density rate) and/or total number of trees planted).</p>
		Location of the farm	Generally, data should include Country and then State/Department and Municipality/District, unless the address is collected for the sake of auditing. This should be the location of the farm itself (main plot), not the home of the farmer, if different.
	Coffee Profit	Total revenue from coffee sales minus total costs for coffee production (Reported in USD/ha of coffee productive area.)	<p>The simple approach (which avoids the additional time and resources necessary for detailed accounting while still providing good results) is to ask for the <b>total</b> revenue from sales of coffee as a whole, and subtract main costs. This indicator is reported on a per hectare basis to allow comparability across projects and regions.</p> <p>This simplified approach does not cover asking the producer about revenue and prices for each transaction or amount sold, nor any premiums or deductions. It also factors in only the main costs in the coffee production system (see Cost of Production indicator below).</p>

**Economic  
(Prosperity)**

<p><b>Yield / Productivity</b></p>	<p>kgs of GBE (harvested)/ha of coffee productive area</p>	<p>The approach requires knowing:</p> <ol style="list-style-type: none"> <li>1. Coffee productive area (requires local land area unit conversion to hectares)</li> <li>2. Amount harvested (requires local unit conversion to kgs)--Amount sold can be a suitable proxy where harvested amounts are unknown (i.e., many smallholders will only know production volumes when their product is weighed at the mill)</li> <li>3. Form of coffee (will require conversion to GBE)</li> </ol>
<p><b>Cost of Production</b></p>	<p>Costs incurred to produce the coffee during the last production year (calculated per kg of GBE)</p>	<p>The simple approach asks only about the main costs in the production system that typically account for the vast majority of total costs (and the total amount spent on each during the last production year). By focusing on the main costs in a system, this provides a good sense of the economic picture on the farm without adding substantial detail to the approach.</p> <p>Main costs typically include (at a minimum):</p> <ul style="list-style-type: none"> <li>-Fertilizers</li> <li>-Pesticides</li> <li>-Hired Labor</li> <li>-Planting material/ Renovation costs</li> </ul> <p>For those using the Full cost accounting approach the categories are comparable though fewer. The full approach would include: deductions by buyers, rent of land, energy, irrigation, capital assets, cultivation practices, traceability and record keeping, costs of standards or certifications, planting and reforestation costs, training costs, interest on credit, crop insurance, cooperative feeds, or the value of unpaid family labor (although any important costs in a system should be captured).</p> <p>Costs should be associated with the coffee production only (i.e., if labor is hired for multiple crops, only the portion used for coffee production should be included). One way to make sure that costs are correctly associated with the production of the coffee is to ask for the percent of inputs that were used for the coffee.</p> <p>When calculating costs, include only expenditures coming from the household's own revenue. If inputs are provided as technical assistance for free or at a subsidized cost on a persistent, substantial, and systemic basis it is recommended to account for the value of the input as a cost in the calculation (at an appropriately determined rate).</p> <p>This indicator is a Sub-metric for Net Income (or Profit).</p>
<p><b>Price - Chain efficiency &amp; returns distribution</b></p>	<p>Average Price received per kg of coffee (GBE)</p>	<p>The simple approach involves asking for the total revenue received from coffee during the last production year as well as the amount sold (and the form). The average price per unit can then be calculated. For multiple sales, calculate the price average of sales.</p> <p>The average price can then be compared to the global reference price (e.g., ICO)</p> <p>This approach avoids the additional time and resources necessary for detailed accounting and asking about each sale (and the associated premiums, deductions or bonuses) while still providing good results.</p>
<p><b>Sustainable purchases</b></p>	<p>Volume of sustainable purchases by buyer and as a proportion of total, and change year to year.</p>	<p>Detailed methodology developed by the SPF Working Group (not a farmer level metric)</p>

**Social**  
(improved wellbeing /  
livelihoods)

<p><b>Poverty Level</b></p>	<p>Comparison of total household revenue to International (World Bank) Poverty Line (<i>total divided by # adult individuals in hh</i>)</p>	<p>The Monitoring approach is to ask producers the proportion of total household income coming from the sale of coffee (since the coffee revenue amount from the Net Income indicator (Profit) is already known, an estimate of the full household income amount can be derived with that proportion). This allows a good sense of the economic picture on the farm without adding substantial detail to the approach in terms of all household income streams (e.g., sales of other crops or services, income from other businesses, gifts and remittances, etc.) and any associated costs.</p> <p>The World Bank International Poverty Line is \$1.90 USD per day as of 2015. Comparison to national poverty lines may be useful for discussion related to one country or domestic policy but that can be calculated separately as needed.</p> <p>An organization may choose to use the PPI score evaluation of the propensity of a farmer or community to be poor as another option that can be more relevant in some rural areas and can be calculated separately as needed. Organizations may also choose to participate on this topic in the Living Income Community of Practice.</p>
<p><b>Wages</b></p>	<p>Daily average earnings for farm labor compared to (rural) minimum wage</p>	<p>The approach involves asking for the average daily wage rate paid. If applicable, include wages for coffee production, harvesting, and processing and take an average across all three categories.</p> <p>Wage is listed and also expressed as a percentage of the rural minimum wage (where that exists), alternately to the national minimum wage.</p> <p>This approach gives a good sense of worker earnings coming from the most prominent types of labor without needing to detail individual jobs, rates, benefits, etc.</p> <p>Organizations may wish to participate in working groups to define and measure living wage. There is still no widely used methodology, but the ability to understand whether a worker could survive on the wage earned would be useful for any industry.</p>
<p><b>Child labour</b></p>	<p>% of school-age household members, under age 18, who have completed appropriate grade level for their age</p> <p><i>Option:</i> Prohibition of children in hazardous working conditions</p>	<p>The issue of Child Labor is often addressed as a compliance audit question, but it is rarely answered because of the moral hazard (nobody wants to answer that they have child labor). Instead, "children in school at the appropriate grade level" serves to provide a valuable proxy that directly reflects an outcome of child labor and results in a better understanding of the plight of children in a community. Note that in many countries the compulsory school age may be lower than 18, and organizations are welcome to include other age limits in their own analysis of the data, but children in the appropriate grade for their age through 18 serves as an aspirational target. This data can be segmented by gender to get additional insights into the differences in education levels for both boys and girls in a community.</p> <p>As an additional option, it may be desirable to ask whether young workers (those under age 18) are working in hazardous conditions (applying chemical pesticides, using hazardous machinery, moving excessive weights/loads, etc.)</p> <p>These concepts are common to many sustainability standards and the approach is built on the ILO standards and the SDGs.</p>
<p><b>Hunger</b></p>	<p>Number of days in past year that any member of household cut food consumption due to lack of food</p>	<p>Number of days (during prior 12 months) without sufficient food within the household:</p> <ul style="list-style-type: none"> <li>- 0 days</li> <li>- 1-9 days</li> <li>- 10-19 days</li> <li>- 20-29 days</li> <li>- 30 or more days in the past year</li> </ul> <p>More comprehensive nutritional indicators can be expensive and require significant technical ability, time and resources to carry out effectively, so instead the focus is on days of food insecurity as a proxy. Note that while this survey question is often asked to the head of household, this indicator is best expressed when it includes multiple perspectives in the household. This indicator is an important human development issue and a core indicator for social justice.</p>

	<b>Labor Practices</b>	% of good labor practices adopted (of those listed)	<p>This indicator is applicable where farms rely on hired labor (not labor of household members).</p> <p>Evidence of good labor practices include the following:</p> <ol style="list-style-type: none"> <li>1. Clear contracting with workers to avoid any form of forced labor (including slave labor or child labor), which includes: the terms of the work, hours, duration, wages, payment details, deductions or fees, etc.</li> <li>2. Right to organize--the ability for workers to join unions or committees and freely assemble</li> <li>3. Prohibiting discrimination--in terms of pay rates, hiring practices, housing for any group of workers (i.e., on the basis of immigration status, gender, ethnic or religious background, sexual orientation)</li> <li>4. Hazardous working condition management--agrochemical protective gear; training on proper chemical handling, storage, and disposal; proper training and safeguarding for hazardous machinery, workplace sanitation, emergency preparedness, etc.</li> </ol> <p>These concepts are common to many sustainability standards and the approach is built on the ILO standards and the SDGs. While there may be moral hazard in asking these questions outright, asking the questions themselves serves to educate the respondent about the norms and aspirations that are part of general good labor practices.</p>
<b>Environmental (Conserve Nature)</b>	<b>Forest and Ecosystem Protection</b>	<p>Land area (in ha) and proportion of the farm that was converted from natural land (e.g., forest, savanna) to land used for coffee production in the last 5 years.</p> <p>% of forest and ecosystem protection practices used on the farm</p>	<p>The approach involves asking producers if they converted any natural land (e.g., forest, savanna) to land used for coffee production and how much [both in absolute terms (ha) and relative terms (proportion of the farm)] during the last 5 years.</p> <p>In addition, overlaying gps coordinates of farms (See GPS Coordinate instructions above) with regional deforestation maps provides more interesting data at a landscape level to understand areas of risk. Note though that usually only a single gps point will exist for many smallholder farms, meaning that there often isn't sufficient information to track the contribution of individual farms to deforestation in most cases. However, even with single gps points, general farming areas prone to deforestation will still be visible.</p> <p><b>Forest and ecosystem protection practices</b> include:</p> <ul style="list-style-type: none"> <li>• Reforestation with non-productive trees (i.e., those trees that will not be regularly pruned or removed)</li> <li>• Laying land aside (fallow) and/or blocking active use (including hunting)</li> </ul>
	<b>Fertilizer use</b>	Whether a professional assessment or advice was used to determine fertilizer needs on the farm	<p>The simple approach depends on asking the producer about fertilizer use best practices instead of all the individual fertilizer types and amounts they use. Asking if the producer based their fertilizer use on professional advice or assessments is easy to ask in a standardized way globally and can be a proxy for proper fertilization on the farm (there is ample evidence that the correlation between fertilizer use and yields is not as good as prescribed fertilization and yields).</p> <p>Professional assessments include advice from an extension agent or other sustainability program implementer and NOT input sellers.</p> <p>This approach does not require in-depth fertilizer information: nutrient amounts, local commercial names, dosage amounts, application rates, etc.</p>
	<b>Water Conservation &amp; Contamination Prevention</b>	<p>% of applicable water conservation practices used on the farm (of those listed)</p> <p>% of water contamination prevention practices used on the farm (of those listed)</p>	<p>Water conservation practices include (relevance of individual practices will need to be determined by region): drip irrigation, water catchments, water-efficient processing. For practices that conserve soil moisture balance and control runoff, please reference the "Soil Conservation" indicator below.</p> <p>Water contamination prevention measures include the following: pesticide equipment is cleaned away from natural water bodies, ensuring untreated water from processing does not enter natural water bodies, grazing livestock away from natural water bodies, domestic discharge prevented from entering natural water bodies</p> <p>These concepts are common to many sustainability standards and the approach is built on FAO Good Agricultural Practices.</p> <p>Asking about best practice adoption is a standardized way to address this indicator globally without the expensive and technical expertise required to measure water use amounts (and evaluating that in the local context) or taking water samples to evaluate contamination levels and the required protocols for that (taking samples at the appropriate locations and time, factoring in elements that may be beyond an individual producers control, etc.).</p>

	<b>Pest control/ hazards</b>	<p>% of IPM practices employed on the farm</p> <p>Use of banned or hazardous pesticides on the farm</p>	<p><b>Standard IPM techniques include:</b></p> <ul style="list-style-type: none"> <li>• Conduct regular visual examinations of the coffee to detect pests and/or diseases</li> <li>• Use traps, repellants, and natural pesticides</li> <li>• Create or preserve places (including plant species) for beneficial predators of pests to live</li> <li>• Maintain written record of pest infestation, treatments, and results</li> <li>• Plant or preserve species that repel pests of the coffee</li> <li>• Apply pesticide or kill pests only after identifying the pest and only at the best time in the pest's life cycle to permanently reduce its population</li> </ul> <p>Banned or hazardous pesticides* will be based of the WHO Ia and Ib lists. COSA suggests that over time it will be useful to understand the types and/ or individual banned pesticides being used so that research bodies can develop varieties or take other actions that help prevent the need for their use in the field. This approach does not address proper disposal of pesticide containers.</p> <p>*Pesticides include insecticides, fungicides, rodenticides, nematicides and herbicides.</p> <p>Focusing on IPM techniques is a globally standardized way to understand pest management best practices without the more costly and time-consuming process of detailing individual pesticides, active ingredients, amount used in local units, etc.</p>
	<b>Soil Conservation</b>	<p>% of applicable soil conservation practices used on the farm (of those listed)</p>	<p><b>Soil conservation measures include:</b></p> <ul style="list-style-type: none"> <li>• contour planting, terracing, or soil ridges around trees</li> <li>• live fences, hedgerows or buffer zones</li> <li>• recycling organic matter and crop waste</li> <li>• interplanting, nitrogen fixing plants, cover crops, or mulching</li> <li>• check dams, drainage channels or diversion ditches</li> </ul> <p>These concepts are common to many sustainability standards and the approach is built on FAO Good Agricultural Practices.</p> <p>Asking about best practice adoption is a standardized way to address this indicator globally without the expensive and technical expertise required to measure the actual amount of soil conserved or to do individual soil testing on farms.</p>