

SOIL QUALITY

Outcome indicator

Indicator Phrasing

English: % of reference plots in the target areas with improved levels of [specify: organic matter content / soil structure / pH / or specify the exact nutrient(s)]

French: % de parcelles de référence dans les zones cibles avec des niveaux améliorés de [spécifier: teneur en matière organique / structure du sol / pH / ou spécifier le(s) nutriment(s) ex

Portuguese: % de parcelas de referência nas áreas-alvo com níveis melhorados de [especifique: teor de matéria orgânica / estrutura do solo / pH / ou especifique o (s) nutriente (s) exato (s)]

Czech: % referenčních parcel půdy v cílových oblastech se zlepšenými hodnotami [určete: organické hmoty / struktury půdy / pH / či určete konkrétní živiny]

What is its purpose?

The indicator assesses selected aspects of soil quality in the project target areas. It is suitable for interventions addressing a specific deficiency in the soil condition.

How to Collect and Analyse the Required Data

Determine the indicator's value by using the following methodology:

- 1) **Select the exact location** of the reference plots (fields) where you plan to conduct soil quality testing.
- 2) **Decide on your sampling methodology**, following the sampling guidance of the technique you use.
- 3) **Specify and plan the exact procedures**. Prepare the required materials, tools and record sheets. The sampling design needs to respect the conditions of the reference plots as well as the seasonality (cropping seasons, rains).
- 4) Ensure that the place where you aim to collect the samples can be easily found even several years after the "baseline" samples were taken. Use exact GPS data, clearly visible and resistant physical markers, photos, etc. and document them in an easily accessible way. Remember, even a person who has never been to the area must be **able to replicate the samples collection** in as comparable way

as possible.

5) **Collect and analyse the soil quality** by one of the following techniques, depending on the focus of your indicator:

- > using **Soil Testing Kits** focusing on macronutrient contents (P, N, K), pH and organic matter contents (this is a recommended and in most cases sufficient method)

- > conducting **visual soil assessment** following the FAO manual's guidance (see below), assessing one or more of the following aspects of soil quality: soil texture, soil colour indicating organic content, soil structure, earthworms and other aspects

- > ensuring **laboratory analysis** (if required and available), following the laboratory staff's guidance

6) **Record the values** for specific reference plots and use expert guidance to suggest feasible, sustainable ways for improving the soil quality.

7) During the endline survey, **replicate the process**, using the same techniques at exactly the same reference plots.

8) To **calculate the indicator's value**, divide the number of reference plots with improved soil quality by the total number of tested reference plots. Multiply the result by 100 to convert it to a percentage.

Important Comments

1) The indicator **can focus on more than just one aspect** of soil quality (for example, on improved organic content and the presence of a certain nutrient). In such cases, you can combine two different soil quality assessment methods.

2) The values of some soil properties can change significantly throughout the season. Do your best to **collect baseline and endline samples** in the same period of a year and after the same crop was planted (as some crops significantly influence the levels of specific nutrients); otherwise they might not be comparable.

3) Soil testing **always needs to be done under supervision of technical experts** experienced in a correct selection, collection and subsequent management of soil samples. If your team lacks such specialists, contact relevant companies, the Ministry of Agriculture's department or local universities.

4) Keep in mind that while the nutrient content might change depending on the way in which the land is managed, the pH and organic content should be maintained at a stable, optimal level to ensure the soil's stability.

Access Additional Guidance

- FAO (2008) [Visual Soil Assessment: Field Guides](#)

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