**EXERCISE 5B. MEASURING TOPSOIL DEPTH**

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| *OBJECTIVE***After this exercise the participants will be able to:*** Use two techniques to measure topsoil depth: (1) observing soil layers in a road cut in the area or (2) digging a hole on the farm plot and examining it.
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| *EQUIPMENT NEEDED** Shovel or other digging tool
 | *EXPECTED OUTPUT** Group members know how to take topsoil measurements.
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| *TIME*30-45 minutes | *PREPARATION** To prepare to demonstrate the first technique, find a place within easy walking distance of the group’s meeting location where they can see a cross- section of the earth where it has been cut away for a road or some other construction project.
* To prepare a demonstration of the second technique, dig the hole ahead of time. Continue digging until you see the color of the soil beginning to lighten. Dig to at least 50 cm, even if there is no topsoil and no color change to observe.
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*SUGGESTED PROCEDURE:*

1. Before looking in detail at the soil, lead the group in a discussion regarding soils in the area. Explore local names and the characteristics assigned to each soil (good/bad, poor/rich, stony/soft, etc.).
2. After looking at the soil, discuss the differences you observe in the different soil layers. Note color differences, differences in size and number of stones, different depths. Connect this with the previous discussion. Ask:
	* What types of soil are visible here?
	* What are the soil’s main characteristics?
3. If there is darker soil (soil with more organic matter) at the top, this is topsoil, also called the A-horizon layer. Estimate or measure the depth of the topsoil layer.
4. Ask the group the significance of the topsoil for plant growth. If needed, explain that most crops need at least 20-25 cm of topsoil for premium production. When the topsoil is shallower, you need to add organic matter each year to maintain a good crop.
5. At the “road cut” location, note the presence or absence of stones in different layers and on the soil surface. Compare the number of stones on the surface to the number of stones you see along a parallel horizontal line at the lower layers. If the number, or concentration, on the surface is greater than below, much of the topsoil has been already blown or washed away by erosion.

