Food and Agriculture Organization of the United Nations

SUSTAINABLE DEVELOPMENT GOALS

Practical exercises on computing indicators 2.3.1 and 2.3.2

Cape Verde as an example
(Pratical demonstration in Excel)

Regional Training for Africa

Virtual Training on SDG Indicators 2.3.1 and 2.3.2

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Computation of SDG 2.3.1 and 2.3.2 using Excel

1. The data used
2. Threshold for identification of small holders
3. Identification of small holder
4. Computation of SDG 2.3.1 and SDG 2.3.2

1. The data used

For this exercise, we have used a sample data from Cape Verde agricultural survey.

The data required are:

- Revenue
- Input of land
- Input of labour
- Cost (not available in Cape Verde, so we generated fictive figures)
- Sampling weight (should be applied both for threshold identification and for indicators computation)

2. Threshold for identification of small holders

Land threshold

Computation of the threshold of the bottom 40% of operated land size distribution is done by following steps:

1. Using excel, sort in ascending order of the value of the total land used and calculate the cumulative distribution. Each frequency should be multiplied by the sampling weight.
2. Calculate 40% of the maximum value of the cumulative distribution
3. The value that corresponds to the 40% of the cumulated distribution is identified as the threshold.

2. Threshold for identification of small holders

Livestock threshold

Same process as for the land should be applied to the total livestock in TLU (Tropical Livestock Units),

But for Cape Verde sample data we don't have livestock data.

Revenue threshold

1. Using excel, sort in ascending order of the value of the revenue in PPP and calculate the cumulative distribution. Each frequency should be multiplied by the sampling weight.
2. Calculate 40% of the maximum value of the cumulative distribution
3. The value that corresponds to the 40% of the cumulated distribution is identified as the threshold.

3. Identification of small holder

Holders meeting the 3 thresholds and the additional cap (revenue less than 34 387 Purchasing Power Parity Dollars per year) are to be considered for computing SDG 2.3.1 and 2.3.2

fx =IF(AND(B4<=$L$2;C4<=$L$1;B4<=$L$3);1;0)

C	D	E	F	G	H	I	J	K	L
								Threshold for land size	0.5
								Threshold for Revenue	71.0535828
	labour	cost	weight	Small-scale food producers for target 2.3	weight*revenue/Labour_da	Weight*(revenue-cost)		**Revenue additional cap**	34,387
0.8	4	10.080328	16.89	0	85.13	170.26			
0.8	2	49.4155326	34.48	0	1,703.85	1,703.85			

4. Computation of SDG 2.3.1 and SDG 2.3.2

Formula for SDG 2.3.1

SDG 2.3.1 = $$I^t_{2.3.1} = \frac{\sum_{i=1}^{n} W_i \left(\frac{R_i^t}{L_i^t}\right)}{\sum_{i=1}^{n} W_i}$$

where:

R_i^t is the revenue in PPP of the small-scale food producer i during year t;

L_i^t is the labor imputed by the small-scale agricultural producer i during year t

W_i is the final sampling weight of the survey

$\sum_{i=1}^{n} W_i$ is the total number of small-scale agricultural producers.

4. Computation of SDG 2.3.1 and SDG 2.3.2

Formula for SDG 2.3.2

SDG 2.3.2 = $I^{t}_{2.3.1} = \frac{\sum_{i=1}^{n} W_i (R_i^t - C_i^t)}{\sum_{i=1}^{n} W_i}$

where:

R_i^t is the revenue in PPP of the small-scale food producer i during year t;

C_i^t is the cost of production supported by the small-scale agricultural producer i during year t

W_i is the final sampling weight of the survey

$\sum_{i=1}^{n} W_i$ is the total number of small-scale agricultural producers.

Practical demonstration in excel

Source: FAO e-learning on SDG Indicators 2.3.1 and 2.3.2

Thank you

For more detailed information on Indicators 2.3.1 and 2.3.2

http://www.fao.org/sustainable-development-goals/indicators/231/en/

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