

**Name:**

Risk of abandonment of agricultural activity.

**Definition:**

This indicator is based on the IRENA 17 Indicator- "marginalization" (EEA, 2005). The indicator aims to estimate the risk of farm and its productive activity abandonment.

As it will be developed in the indicator interpretation, the two more influential factors in determining the continuity of the farm activity are:

- Farmers age: if the farmer is older than 55 (and there is no clear successor)
- Farm net income per annual work unit (AWU): less than 50% of the regional average.

**Method of calculation:**

$$RA = RAA + RAI$$

Where:

RA = Risk of abandonment of agricultural activity.

RAA = Risk of abandonment of agricultural activity because of the farmer's age factor.

RAI = Risk of abandonment of agriculture activity because of the income.

RAA:

- If  $A \leq 55$  or SUC = "Yes", RAA = 0
- If  $55 < A \leq 70$  and SUC = "No", RAA =  $0.5 \times (A - 55) / (70 - 55)$
- If  $A > 70$  and SUC = "No", RAA = 0.5

SUC = Is there a successor for the farm? ("Yes" or "No").

A = Farmer's age.

RAI:

- If  $AWU_C < AWU_F$ , RAI = 0
- If  $(AWU_C) / 2 < AWU_F < AWU_C$ , RAI =  $0.5 \times (AWU_C - AWU_F) / (0.5 \times AWU_C)$
- If  $AWU_F < (0.5 \times AWU_C)$ , RAI = 0.5

$AWU_C$  = Is the net income per annual work unit of the country.

$AWU_F$  = Is the net income per annual work unit of the farm.

**Interpretation**

Similar to the IRENA 17 indicator, "Marginalization" (EEA, 2005), the Risk of abandonment of agricultural activity indicator (RA) is composed of two factors: farmer's age and farmer's income.

The Risk of abandonment of agricultural activity because of the farmer's age factor (RAA), refers to a farmer that is older than 55, about to retire, that does not have a clear successor.

Without clear successor, the older the farmer the greater the risk of abandonment of agricultural activity.

Risk of abandonment of agricultural activity because of the income (RAI) refers to a farmer with net income (per annual work unit) less than 50% of the country average. The lower the income in relation to the mean for the region, the higher the risk of abandonment of agricultural activity to engage in other more profitable remunerative activities (industrial and service sectors).

For the calculation of the risk of abandonment of agricultural activity (RA), both risks (RAA and RAI) have been linearized so that the different age and income combinations are reflected in the final value of the RA indicator.

By following the same classification proposed for the IRENA 17 Indicator (EEA, 2005), there are three categories for the risk of abandonment of agricultural activity:

- Low risk of abandonment of agricultural activity:  $RA = 0$ .
- Medium risk of abandonment of agricultural activity:  $0 < RA < 1$ .
- High risk of abandonment of agricultural activity:  $RA = 1$ .

In terms of the sustainability, the abandonment of agricultural activity represents a loss in two ways. On the one hand, the agricultural activity becomes less effective to keep people in rural areas, which is to the detriment of its social sustainability. On the other hand, in an environmental context, the abandonment of the croplands means a biodiversity loss generated by the agricultural activity. It is worth remembering that in certain agroecosystems, local flora and fauna is adapted to the existence of crops and to the fact that stopping these activities means in many cases the loss of habitat.

In a nutshell, the RA Indicator has a value between 0 and 1 and the higher the value the less the social sustainability of the farm.

#### **Information source:**

Farmer's age and successor: data obtained in a farmers survey.

AWU<sub>C</sub>: data obtained from Eurostat.

AWU<sub>F</sub>: data obtained from Indicator 2.

#### **Bibliography and references:**

European Commission (EC) services, DG Agriculture and Rural Development.  
[http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=sdg\\_02\\_20](http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=sdg_02_20)

European Environment Agency (2005). Indicator Fact Sheet IRENA 17 – Marginalisation. using composite indicators. *Ecological economics*, 69(5), 1062-1075.

Gómez-Limón, J. A., & Sanchez-Fernandez, G. (2010). Empirical evaluation of agricultural sustainability