



The Regeneration Index

Léa Lugassy - Scientific coordinator

A movement of cooperation to accelerate the ecological transition of agriculture and alimentation

62

Corporation members

620

Farmer members

A national network of technical partners



Our method : continuous progress and results measurement

A **shared responsibility** and concrete commitment to re-create value



A compass for progress : the Regeneration Index



It is the **agronomic core** of our actions. It allows to assess the results of the agroecological practices (carbon, biodiversity, soil...) and to follow their progression



Initial on-farm diagnostics

Where is the farmer in its transition towards agroecology ?

→ build-up of the progress plan

Annual follow-up

Are the practices improving ? Is the agroecosystem regenerating ?

→ assess progression

Supply chain

Is the RI high enough (> 40/100) to enter an agroecological food chain ?

→ Valorize agroecological production

Production covered by the Regeneration Index



Today:

- Arable crops, industrial crops, field vegetables
- Fruit-production

Available soon:

- Hop (June 2021)
- Wine growing (June 2021)
- Market gardening (December 2021)
- Cattle farming (December 2021)



The soil at the core of the Regeneration Index



SHIELD

+ FOOD

Carbon

HOUSE



Soil cover- Axis 1

Food for the soil :
Carbon - Axis 3
Nitrogen - Axis 4

Soil tillage - Axis 2
Phytosanitary management - Axis 5

Fungi

Near surface and roots



Earthworms

Galleries
Clay-humus complex



Benefits for crops:

- Good rooting
- Water retention
- Nutrients ++
- Allies (fungi, nitrogen-fixing free bacteria)

but not only !



Biodiversity
Axis 6



Agroforestry
Axis 7



Formation
Axis 8

The framework « Arable crops »: the perimeter

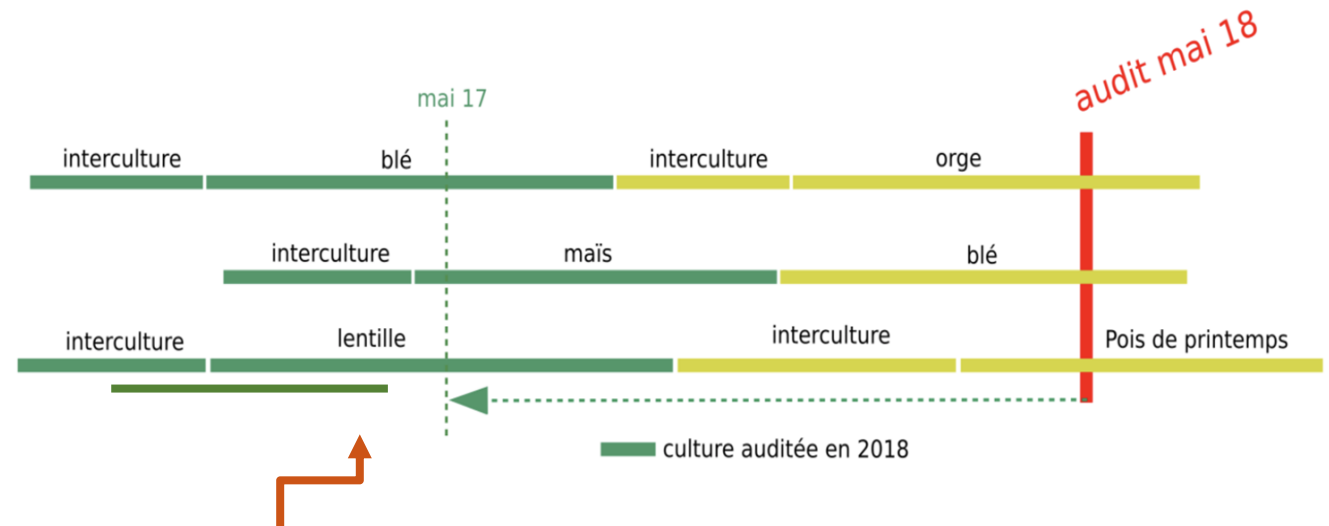
- Applies to the data from the **campaign of year n-1**
- Criteria are calculated at the **scale of the production system** (ex arable crops, fruits...): **mean of the plots** in this production system
- Groups of similar plots: same type of soil, same previous crop, same crop, same cultural operations

For the previous intermediate crop

- Date of harvest and type of soil cover at harvest

If cover crop:

- Sowing date
- Type of soil preparation
- Main species and number of species
- Biomass returned to the soil (T DM / ha)
- Date and method of destruction



For the main crop and eventual 2nd crop or catch crop:

- Type of soil preparation, depth, date(s)
- Sowing date
- Soil cover at seeding
- Organic amendments (product(s) and quantities)
- Irrigation water
- Harvest: date, yield, crop residues management

Data collected in fruit-production

For each group of similar plots

- Surface
- Soil characteristics
- Grape variety(ies)
- Year of plantation
- Width of rows and inter-rows

On the farm

- Semi-natural habitats
- Phytosanitary strategy
- Formation to agroecology



On the rows

- Tillage
- Vegetation management
- Organic amendments
- Phytosanitary treatments
- Diversity of varieties

On the inter-rows

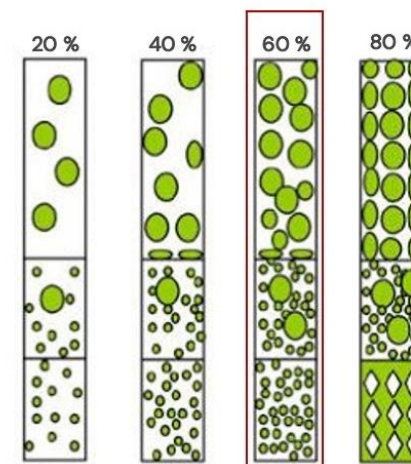
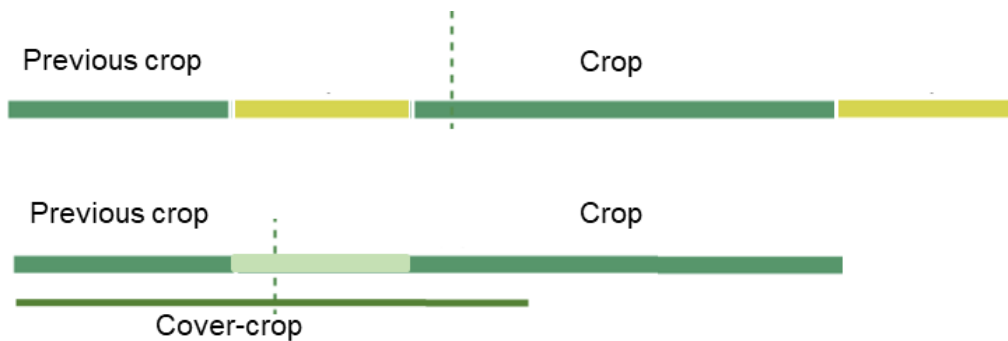
- Tillage
- Vegetation management
- Organic amendments
- Phytosanitary treatments

Soil cover



What is the mean level of soil coverage ?	High threshold: 90%	> High threshold: 18 points
	Low threshold: 60%	< Low threshold: 0 points
		In-between thresholds: linear

What is the mean level of soil coverage ?	High threshold: 90%	> High threshold: 20 points
	Low threshold: 40%	< Low threshold: 0 points
		In-between thresholds: linear



Source : N. Fromont d'après PRODON

Soil tillage

How is the soil prepared ?	A: More than 30% in Direct Seeding, Less than 30% in Heavy Simplified Cultural Technics/ploughing, the rest in Light Simplified Cultural Technics	18
	B: Less than 30% in direct seedind, less than 30% in Heavy Simplified Cultural Technics/ploughing, the rest in Light Simplified Cultural Technics OR More than 50% in Direct Seeding and more than 50% in Heavy Simplified Cultural Technics/ploughing	12
	C: Less than 30% in Direct Seeding, more than 30% in Heavy Simplified Cultural Technics/ploughing, the rest in Light Simplified Cultural Technics	6
	D: 100% in Heavy Simplified Cultural Technics/ploughing	0

Row management (note of impact based on the type and number of interventions)	A: < 4 D: > 8	/ 20
Inter-row management (note of impact based on the type and number of interventions)	A: < 4 D: > 8	



Carbon storage

Organic matter / clay ratio	A: > 20 B: > 17 and ≤ 20 C: > 12 and ≤ 17 D: ≤ 12	/ 5 points (arable crops) / 6 points (fruit-production)
Carbone entries	A: ≥ 8 t of C/ha D: ≤ 4 t of C/ha	/ 13 points (arable crops) / 14 points (fruit-production)



Nitrogen fertilisation

<p>Arable crops: What is the surface that receives legumes and/or organic nitrogen ?</p> <p>Fruit-production: What is the surface that does not receive mineral nitrogen ?</p>	<p>High threshold: 70% Low threshold: 30%</p> <p>High threshold: 100% Low threshold: 0%</p>	<p>/ 4 points (fruit-production)</p> <p>/ 6 points (arable crops)</p>
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Phytosanitary management

Comparison of the IFT herbicide to the regional median	A: $\leq -50\%$ D: $\geq 0\%$	/ 4
Comparison of the IFT non-herbicide to the regional median	A: -50% D: $\geq 0\%$	/ 4
What is the strategy of the farmer to reduce its IFT ?	A: Re-conception of the farming system B: Substitution of chemical- by organic- or natural-products C: Efficiency of use D: No strategy	/ 8



Biodiversity

Arable crops: What is the surface of the farm in biodiversity (SIE) ?	A: > 10% D: ≤ 5%	/ 7,5
Fruit-production: What is the surface of the farm in biodiversity (SET in HVE3 label) ?	A: > 100% D: ≤ 10%	/ 8



Arable crops: Diversity of cultivated species over the year (crops + cover crops)	A: 13 and more B: between 9 and 12 C: between 5 and 8 D: 4 or less	/ 7,5
Fruit-production: Diversity of tree varieties in the orchard (species + varieties)	A: 8 and more B: between 5 and 7 C: between 2 and 4 D: 1	/ 8

Formation

The farmer follows 2 days/year of training on agroecological practices or is part of a GIEE ?	Yes	5 points
	No	0 points

FORMATION

Acquérir les fondamentaux du sol vivant et de l'agroécologie

Lundi 21 septembre | Paris



THE REGENERATION INDEX

Scientific and field validation

P. Boivin - *HES-Genève*
I. Delannoy - *CNAM*
M. Duru - *INRAE*
O. Husson - *CIRAD*
A. Peeters - *RHEA-Bruxelles*
J.P Sarthou - *ENSAT-INRAE*
M.A Selosse - *MNHN*
Animation: L. Lugassy - PADV



- ✓ A **common language** inside and between supply chains
- ✓ Meaningful for farmers and citizens
- ✓ No obligation of means but **measure of results**
- ✓ A tool for **dialog** and **cooperation** in supply chains



Intensity of tillage



Carbon and Nitrogen



Phytosanitary management



Biodiversity



Soil cover



Formation



Thank you for your
attention !

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