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STEP 1

Characterization of Agroecological Transition (CAET)

TAPE : Tool for Agroecology Performance Evaluation

STEP 0 — DESCRIPTION OF SYSTEMS AND CONTEXT

Primary and secondary information:
- Production systems, type of household, agroecological zones
- Existing policies (incl. climate change)
- Enabling environment

STEP 1 — CHARACTERISATION OF AGROECOLOGICAL TRANSITIONS (CAET)

On farm/household survey:
- Describe current status
- Based on 10 elements of agroecology with descriptive scales
- Can be self assessment by producer

STEP 1bis — TRANSITION TYPOLOGY

Statistical and/or participatory clustering to reduce sample size if large number of observations in CAET

STEP 2 — CRITERIA OF PERFORMANCE

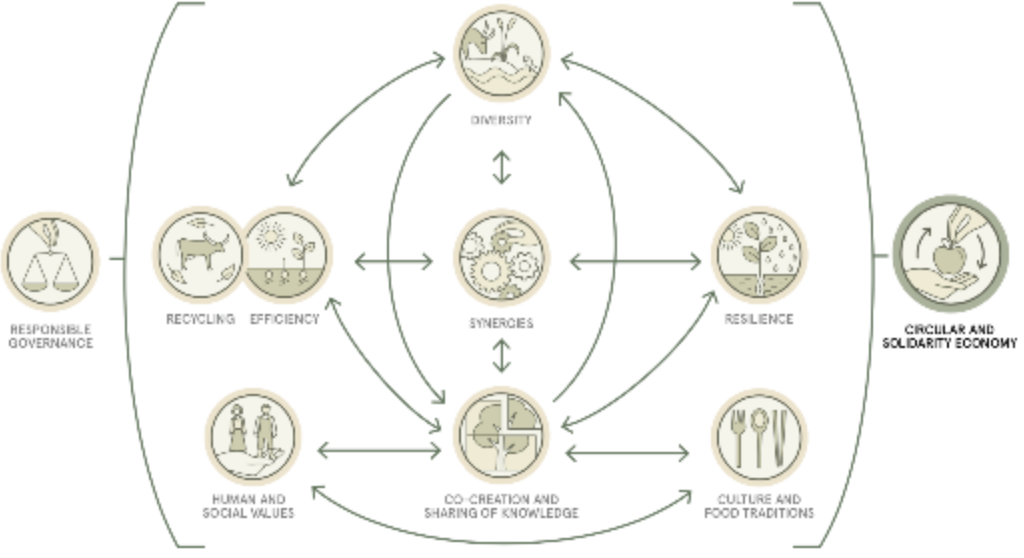
On farm/household survey:
- Measure progress and quantify impact
- Addressing 5 key dimensions for policy makers and SDGs
- Time/cost constraints: keep it simple!

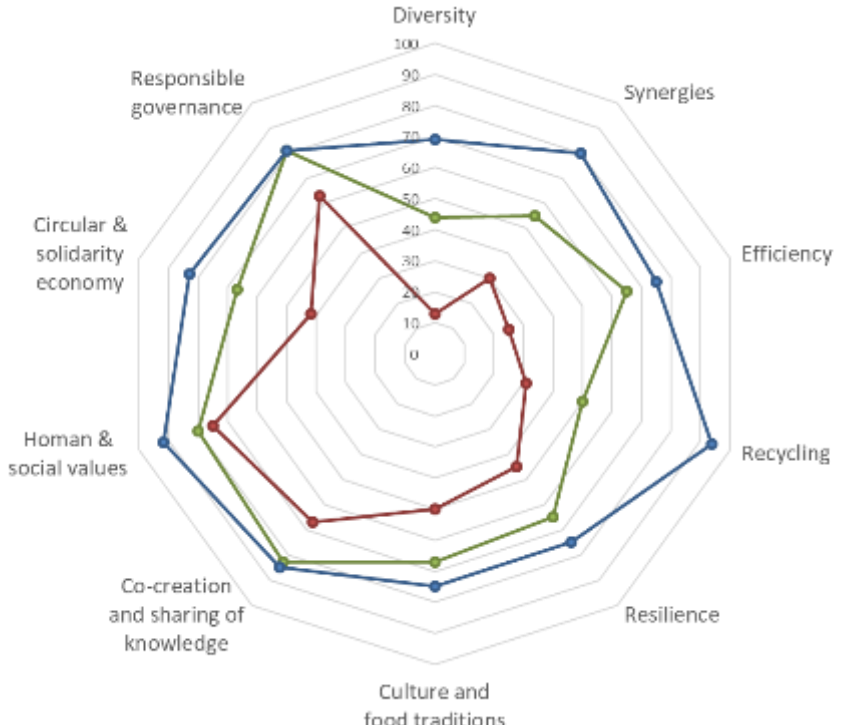
STEP 3 — ANALYSIS AND PARTICIPATORY INTERPRETATION

At territory/community scale:
- Review CAET results, explain with context, enabling environment
- Review Performance results and explain with CAET
- Analyze contribution to SDGs

10 Elements of Agroecology:

Guiding transition towards sustainable food and agriculture systems




Diversity
Synergies
Efficiency
Recycling
Resilience
Culture and
food traditions
Co-creation
and sharing of
knowledge
Homan &
social values
Circular &
solidarity
economy
Responsible
governance
100
90
80
70
60
50
40
30
20
10
0

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1. Diversity

Element	Indeces
Diversification is key to agroecological transitions to ensure food security and nutrition while conserving, protecting and enhancing natural resources	**1.1 Crops**
	1.2 Animals (including fish and insects)
	1.3 Trees (and other perennials)
	1.4 Diversity of economic activities, products and services

1.1 Diversity of Crops

0	1	2	3	4
Monoculture (or no crops cultivated).	One crop covering more than 80% of cultivated area.	Two or three crops with significant cultivated area.	More than 3 crops with significant cultivated area adapted to local and changing climatic conditions.	More than 3 crops of different varieties adapted to local conditions and spatially diversified farm with multi-, poly- or inter-cropping.

less crop diversity

more crop diversity

1.2 Diversity of Animals

0	1	2	3	4
No animals raised.	One species only.	Two or three species, with few animals.	More than 3 species with significant number of animals.	More than 3 species with different breeds well adapted to local and changing climatic conditions.

less animal diversity

more animal diversity

1.3 Diversity of Trees

0	1	2	3	4
No trees (nor other perennials).	Few trees (and/or other perennials) of one species only.	Some trees (and/or other perennials) of more than one species.	Significant number of trees (and/or other perennials) of different species.	High number of trees (and/or other perennials) of different species integrated within the farm land.

less trees

more trees

1.4 Diversity of economic activities, products and services

0	1	2	3	4
One productive activity only (e.g. selling one crop only).	Two or three productive activities (e.g. selling 2 crops or one crop and one type of animal).	More than 3 productive activities.	More than 3 productive activities and one service (e.g. processing products on the farm, ecotourism, transport of agricultural goods, training, etc.).	More than 3 productive activities, and several services

less activities

more activities

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1. Diversity

Element	Index	Score	
 **DIVERSITY**	**1.1 Crops**	**3**	Percentage of the element Diversity: 3+1+2+3 = 8 8 / maximum score (16) = **50%**
	1.2 Animals (including fish and insects)	**1**	
	1.3 Trees (and other perennials)	**2**	
	1.4 Diversity of economic activities, products and services	**2**	

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2. Synergies

Element	Index
Building synergies enhances key functions supporting production and multiple ecosystem services	2.1 Crop-livestock-aquaculture integration
	2.2 Soil-plants system management
	2.3 Integration with trees (agroforestry, silvopastoralism, agrosilvopastoralism)
	2.4 Connectivity between elements of the agroecosystem and the landscape

2.1 Crop-livestock-aquaculture integration

0	1	2	3	4
No integration: animals, including fish, are fed with purchased feed and their manure is not used for soil fertility; or no animals in the agroecosystem.	Low integration: animals are mostly fed with purchased feed, their manure is used as fertilizer	Medium integration: animals are mostly fed with feed produced on the farm and/or grazing, their manure is used as fertilizer	High integration: animals are mostly fed with feed produced on the farm, crop residues and by-products and/or grazing, their manure is used as fertilizer and they provide traction	Complete integration: animals are exclusively fed with feed produced on the farm, crop residues and by-products and/or grazing, all their manure is recycled as fertilizer and they provide more than one service (food, products, traction, etc.).

less crop-livestock integration

more crop-livestock integration

2.2 Soil-plants system management

0	1	2	3	4
Soil is bare after harvest. No intercropping. No crop rotations (or rotational grazing systems). Heavy soil disturbance (biological, chemical or mechanical).	Less than 20% of the arable land is covered with residues or cover crops. More than 80% of the crops are produced in mono and continuous cropping (or no rotational grazing).	50% of soil is covered with residues or cover crops. Some crops are rotated or intercropped (or some rotational grazing is carried out).	More than 80% of soil is covered with residues or cover crops. Crops are rotated regularly or intercropped (or rotational grazing is systematic). Soil disturbance is minimized.	All the soil is covered with residues or cover crops. Crops are rotated regularly and intercropping is common (or rotational grazing is systematic). Little or no soil disturbance.

less cover and more integration with plants

more cover and more integration with plants

2.3 Integration with trees (agroforestry, silvopastoralism, agrosilvopastoralism)

0	1	2	3	4
No integration: trees (and other perennials) don't have a role for humans or in crop or animal production.	**Low integration**: small number of trees (and other perennials) only provide one product or service for humans crops and/or animals.	**Medium integration**: significant number of trees (and other perennials) provide at least one product or service.	**High integration**: significant number of trees (and other perennials) provide several products and services.	**Complete integration**: many trees (and other perennials) provide several products and services.

Less integration with trees

More integration with trees

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2.4 Connectivity between elements of the agroecosystem and the landscape

0	1	2	3	4
No connectivity: high uniformity within and outside the agroecosystem, no semi-natural environments, no zones of ecological compensation.	**Low connectivity**: a few isolated elements can be found in the agroecosystem, such as trees, shrubs, natural fences, a pond or a small zone of ecological compensation.	**Medium connectivity**: several elements are adjacent to crops and/or pastures or a large zone of ecological compensation.	**Significant connectivity**: several elements can be found in between plots of crops and/or pastures or several zones of ecological compensation (trees, shrubs, natural vegetation, pastures, hedges, channels, etc.).	**High connectivity**: the agroecosystem presents a mosaic and diversified landscape, many elements such as trees, shrubs, fences or ponds can be found in between each plot of cropland or pasture, or several zones of ecological compensation.

Less connectivity

More connectivity

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2. SYNERGIES

Element	Index	Score	
 **SYNERGIES**	**2.1 Crop-livestock-aquaculture integration**	**1**	Precentage of the element Synergies: 1 + 4 + 3 + 4 = 12 12 / maximum score (16) = **75%**
	2.2 Soil-plants system management	**4**	
	2.3 Integration with trees (agroforestry, silvopastoralism, agrosilvopastoralism)	**3**	
	2.4 Connectivity between elements of the agroecosystem and the landscape	**4**	

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3. EFFICIENCY

Element	Index
Producing more using less (external) resources	3.1 Use of external inputs
	3.2 Management of soil fertility
	3.3 Management of pests & diseases
	3.4 Productivity and household's needs

3.1 Use of external inputs

0	1	2	3	4
All inputs are purchased from the market.	The majority of the inputs is purchased from the market.	Some inputs are produced on farm/within the agroecosystem or exchanged with other members of the community.	The majority of the inputs is produced on farm/within the agroecosystem or exchanged with other members of the community.	All inputs are produced on farm/within the agroecosystem or exchanged with other members of the community.

Less self-sufficiency

More self-sufficiency

3.2 Management of soil fertility

0	1	2	3	4
Synthetic fertilisers are used regularly on all crops and/or grasslands (or no fertilizers are used for lack of access, but no other management system is used).	Synthetic fertilizers are used regularly on most crops and some organic practices (e.g. manure or compost) are applied to some crops and/or grasslands.	Synthetic fertilisers are used on a few specific crops only. Organic practices are applied to the other crops and/or grasslands.	Synthetic fertilisers are only used exceptionally. A variety of organic practices are the norm.	No synthetic fertilisers are used, soil fertility is managed only through a variety of organic practices.

Less organic practices

More organic practices

3.3 Management of pests & diseases

0	1	2	3	4
Chemical pesticides and drugs are used regularly for pest and disease management. No other management is used.	Chemical pesticides and drugs are used for a specific crop/animal only. Some biological substances and organic practices are applied sporadically.	Pests and diseases are managed through organic practices but chemical pesticides are used only in specific and very limited cases.	No chemical pesticides and drugs are used. Biological substances are the norm.	No chemical pesticides and drugs are used. Pests and diseases are managed through a variety of biological substances and prevention measures.

Less organic practices

More organic practices

3.4 Productivity and household's needs

0	1	2	3	4
Household's needs are not met for food nor for other essentials.	Production covers only household's needs for food. No surplus to generate income.	Production covers household's needs for food and surplus generates cash to buy essentials but doesn't allow savings.	Production covers household's needs for food and surplus generates cash to buy essentials and to have sporadic savings.	All household's needs are met both for food and for cash to buy all essentials needed and to have regular savings.

Household’s needs not satisfied

Household’s needs fully satisfied

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3. EFFICIENCY

Element	Index	Score	
 **EFFICIENCY**	**3.1 Use of external inputs**	**3**	Percentage of the element Efficiency: 3 + 3 + 3 + 4 = 13 13 / maximum score (16) = **81.3%**
	3.2 Management of soil fertility	**3**	
	3.3 Management of pests & diseases	**3**	
	3.4 Productivity and household's needs	**4**	

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4. RECYCLING

Element	Index
Recycling means agricultural production with lower economic and environmental costs	4.1 Recycling of biomass and nutrients
	4.2 Water saving
	4.3 Management of seeds and breeds
	4.4 Renewable energy use and production

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4.1 Recycling of biomass and nutrients

0	1	2	3	4
Residues and by-products are not recycled (e.g. left for decomposition or burnt). Large amounts of waste are discharged or burnt.	A small part of the residues and by-products is recycled (e.g. crop residues as animal feed, use of manure as fertilizer, production of compost from manure and household waste, green manure). Waste is discharged or burnt.	More than half of the residues and by-products is recycled. Some waste is discharged or burnt.	Most of the residues and by-products are recycled. Only a little waste is discharged or burnt.	All of the residues and by-products are recycled. No waste is discharged or burnt.

Less recycling

More recycling

4.2 Water saving

0	1	2	3	4
No equipment nor techniques for water harvesting or saving.	One type of equipment for water harvesting or saving (e.g. drip irrigation, tank).	One type of equipment for water harvesting or saving and use of one practice to limit water use (e.g. timing irrigation, cover crops).	One type of equipment for water harvesting or saving and various practices to limit water use.	Several types of equipment for water harvesting or saving and various practices to limit water use.

Less water saving

More water saving

4.3 Management of seeds and breeds

0	1	2	3	4
All seeds and/or animal genetic resources (e.g. chicks, young animals, semen) are purchased from the market.	More than 80% of seeds/animal genetic resources are purchased from the market.	About half of the seeds are self-produced or exchanged, the other half is purchased from the market. About half of the breeding is done with neighbouring farms.	The majority of seeds/animal genetic resources are self-produced or exchanged. Some specific seeds are purchased from the market.	All seeds/animal genetic resources are self-produced, exchanged with other farmers or managed collectively, ensuring enough renewal and diversity.

Less self-sufficiency in seeds and breeds

More self-sufficiency in seeds and breeds

4.4 Renewable energy use and production

0	1	2	3	4
No renewable energy is used nor produced.	The majority of the energy is purchased from the market. A small amount is self-produced (animal traction, wind, turbine, hydraulic, biogas, wood…).	Half of the energy used is self-produced, the other half is purchased.	Significant production of renewable energy, negligible use of fuel and other non-renewable sources.	All of the energy used is renewable and/or self-produced. Household is self-sufficient for energy supply, which is guaranteed at every time. Use of fossil fuel is negligible.

Less renewable energy

More renewable energy

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4. RECYCLING

Element	Index	Score	
 **RECYCLING**	**4.1 Recycling of biomass and nutrients**	**4**	Percentage of the element Recycling: 4 + 2 + 2 + 2 = 10 10 / maximum score (16) = **62.5%**
	4.2 Water saving	**2**	
	4.3 Management of seeds and breeds	**2**	
	4.4 Renewable energy use and production	**2**	

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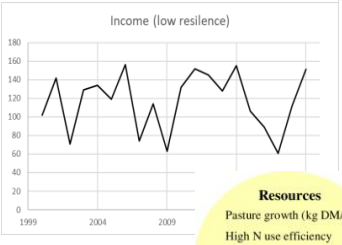
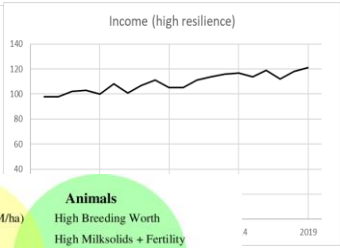
5. RESILIENCE

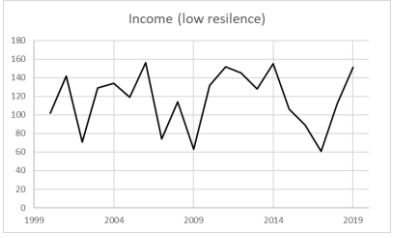
Element	Index
 **An emerging property of agroecology, resilience is key to sustainability**	5.1 Stability of income/production and capacity to recover from perturbations
	5.2 Mechanisms to reduce vulnerability
	5.3 Environmental resilience and capacity to adapt to climate change
	5.4 Average Diversity

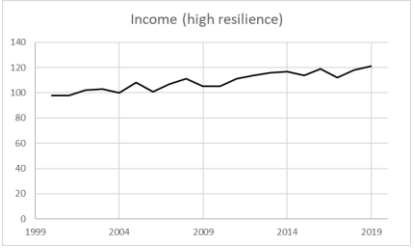




5.1 Stability of income/production and capacity to recover from perturbations

0	1	2	3	4
Income is decreasing year after year, production is highly variable despite constant level of inputs and there is no capacity to recover after shocks/perturbations.	Income is on decreasing trend, production is variable from year to year (with constant inputs) and there is little capacity to recover after shocks/perturbations.	Income is overall stable, but production is variable from year to year (with constant inputs). Income and production mostly recover after shocks/perturbations.	Income is stable and production varies little from year to year (with constant inputs). Income and production mostly recover after shocks/perturbations.	Income and production are stable and increasing over time. They fully and quickly recover after shocks/perturbations.





Less stability

More stability

5.2 Mechanisms to reduce vulnerability

0	1	2	3	4
No access to credit, no insurance, no community support mechanisms.	Community is not very supportive and its capacity to help after shocks is very limited. And/or access to credit and insurance is limited.	Community is supportive but its capacity to help after shocks is limited. And/or access to credit is available but hard to obtain in practice. Insurance is rare and does not allow for complete coverage from risks.	Community is very supportive for both men and women but its capacity to help after shocks is limited. And/or access to credit is available and insurance covers only specific products/risks.	Community is highly supportive for both men and women and can significantly help after shocks. And/or access to credit is almost systematic and insurance covers most of production.

Less solidarity and possibility to receive support

More solidarity and possibility to receive support

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5.3 Environmental resilience and capacity to adapt to climate change

0	1	2	3	4
Local environment is highly prone to climatic shocks and the system has little capacity to adapt to climate change	Local environment suffers from climatic shocks and the system has little capacity to adapt to climate change	Local environment can suffer from climatic shocks but the system has a good capacity to adapt to climate change	Local environment can suffer from climatic shocks but the system has a strong capacity to adapt to climate change	Local environment has a strong natural capital base, climatic shocks are rare and the system has a strong capacity to adapt to climate change

Less capacity to adapt to climate change

More capacity to adapt to climate change

5.4 Average Diversity

Less diversity

More diversity

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5. RESILIENCE

Element	Index	Score	
 **RESILIENCE**	**5.1 Stability of income/production and capacity to recover from perturbations**	**3**	Percentage of the element Resilience: 3 + 3 + 3 + 2 = 11 11 / maximum score (16) = **68.8%**
	5.2 Mechanisms to reduce vulnerability	**3**	
	5.3 Environmental resilience and capacity to adapt to climate change	**3**	
	5.4 Average Diversity	**2**	

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6. Culture and food traditions

Element	Index
Healthy, diversified and culturally appropriate diets for food security and nutrition while maintaining the health of ecosystems	6.1 Appropriate diet and nutrition awareness
	6.2 Local or traditional (peasant / indigenous) identity and awareness
	6.3 Use of local varieties/breeds and traditional (peasant & indigenous) knowledge for food preparation

6.1 Appropriate diet and nutrition awareness

0	1	2	3	4
Systematic insufficient food to meet nutritional needs and lack of awareness of good nutritional practices.	Periodic insufficient food to meet nutritional needs and/or diet is based on a limited number of food groups. Lack of awareness of good nutritional practices.	Overall food security over time, but insufficient diversity in food groups. Good nutritional practices are known but not always enforced.	Food is sufficient and diverse. Good nutritional practices are known but not always enforced.	Healthy, nutritious, diversified diet. Good nutritional practices are well known and enforced.

Less healthy and nutritious diet

More healthy and nutritious diet

6.2 Local or traditional (peasant / indigenous) identity and awareness

0	1	2	3	4
No local or traditional (peasant / indigenous) identity felt.	Little awareness of local or traditional identity.	Local or traditional identity felt in part, or that concerns only part of the household.	Good awareness of local or traditional identity and respect of traditions or rituals overall.	Local or traditional identity strongly felt and protected, high respect for traditions and/or rituals.

Weaker identity

Stronger identity

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6.3 Use of local varieties/breeds and traditional (peasant & indigenous) knowledge for food preparation

0	1	2	3	4
No use of local varieties/breeds nor traditional knowledge for food preparation.	A majority of exotic/introduced varieties/breeds are consumed, or there is little use of traditional knowledge and practices for food preparation.	Both local and exotic/introduced varieties/breeds are produced and consumed. Local or traditional knowledge and practices for food preparation are identified but not always applied.	The majority of the food consumed comes from local varieties/breeds and traditional knowledge and practices for food preparation are implemented.	A number of local varieties/breeds are produced and consumed. Traditional knowledge and practices for food preparation are identified, applied and recognised in official frameworks and/or specific events.

Less local varieties

More local varieties

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6. Culture and food traditions

Element	Index	Score	
 **Culture and food traditions**	**6.1 Appropriate diet and nutrition awareness**	**4**	Percentage of the element Culture and Food Traditions: 4 + 4 + 4 = 12 12 / maximum score (12) = **100%**
	6.2 Local or traditional (peasant / indigenous) identity and awareness	**4**	
	6.3 Use of local varieties/breeds and traditional (peasant & indigenous) knowledge for food preparation	**4**	

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7. Co-creation and sharing of knowledge

Element	Index
Bottom-up approaches and co-creation through participatory processes	7.1 Platforms for the horizontal creation and transfer of knowledge and good practices
	7.2 Access to agroecological knowledge and interest of producers in agroecology
	7.3 Participation of producers in networks and grassroot organizations

7.1 Platforms for the horizontal creation and transfer of knowledge and good practices

0	1	2	3	4
No platforms for co-creation and transfer of knowledge are available to producers.	At least one platform for the co-creation and transfer of knowledge exists but does not function well and/or is not used in practices.	At least one platform for the co-creation and transfer of knowledge exists and is functioning but is not used to share knowledge on agroecology specifically.	One or several platforms for the co-creation and transfer of knowledge exist, are functioning and are used to share knowledge on agroecology, including women.	Several well established and functioning platforms for the co-creation and transfer of knowledge are available and widespread within the community, including women.

Less creation and transfer of knowledge

More creation and transfer of knowledge

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7.2 Access to agroecological knowledge and interest of producers in agroecology

0	1	2	3	4
Lack of access to agroecological knowledge: principles of agroecology are unknown to producers.	Principles of agroecology are mostly unknown to producers and/or there is little trust in them.	Some agroecological principles are known to producers and there is interest in spreading the innovation, facilitating knowledge sharing within and between communities and involving younger generations.	Agroecology is well known and producers are willing to implement innovations, facilitating knowledge sharing within and between communities and involving younger generations, including women and younger generations.	Widespread access to agroecological knowledge of both men and women: producers are well aware of the principles of agroecology and eager to apply them, facilitating knowledge sharing within and between communities and involving younger generations.

Less agroecological knowledge

More agroecological knowledge

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7.3 Participation of producers in networks and grassroot organizations

0	1	2	3	4
Producers are isolated, have almost no relations with their local community and do not participate in meetings and grass-root organisations.	Producers have sporadic relations with their local community and rarely participate in meetings and grass-root organisations.	Producers have regular relations with their local community and sometimes participate in the events of their grass-root organisations but not as much for women.	Producers are well interconnected with their local community and often participate in the events of their grass-root organisations, including women.	Producers (with equal participation of men and women) are highly interconnected and supportive and show a very high engagement and participation in all the events of their local.

Less participation

More participation

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7. Co-creation and sharing of knowledge

Element	Index	Score	
 **Co-creation and sharing of knowledge**	**7.1 Platforms for the horizontal creation and transfer of knowledge and good practices**	**3**	Percentage of the element Co-creation and sharing of knowledge: 3 + 3 + 4 = 10 10 / maximum score (12) = **83,3%**
	7.2 Access to agroecological knowledge and interest of producers in agroecology	**3**	
	7.3 Participation of producers in networks and grassroot organizations	**4**	

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8. Human and social values

Element	Index
 **Strong emphasis on dignity, equity, inclusion and justice all contributing to the improved livelihoods dimension of the SDGs.**	8.1 Women's empowerment
	8.2 Labour (productive conditions, social inequalities)
	8.3 Youth empowerment and emigration
	8.4 Youth empowerment and emigration [if applicable]

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8.1 Women's empowerment

0	1	2	3	4
Women do not normally have a voice in decision making, not in the household nor in the community. No organisation for women empowerment exists.	Women may have a voice in their household but not in the community. And/or one form of women association exists but is not fully functional.	Women can influence decision making, both at household and community level, but are not decision makers. They don't have access to resources. And/or some forms of women associations exist but are not fully functional.	Women take full part in decision making processes but still don't have full access to resources. And/or women organisations exist and are used.	Women are completely empowered in terms of decision making and access to resources. And/or women organisations exist, are functional and operational.

Less empowered women

More empowered women

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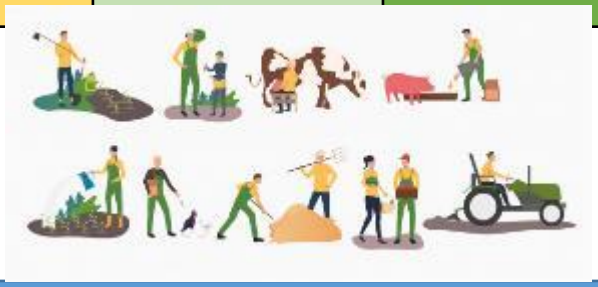
8.2 Labour (productive conditions, social inequalities)

0	1	2	3	4
Agricultural supply chains are integrated and managed by agribusiness. There is a social and economic distance between landowners and workers. And/or workers don't have decent working conditions, make low wages and are highly exposed to risks.	Working conditions are hard, workers have average wages for the local context and may be exposed to risks.	Agriculture is mostly based on family farming but producers have limited access to capital and decision-making processes. Workers have the minimum decent labour conditions.	Agriculture is mostly based on family farming and producers (both men and women) have access to capital and decision-making processes. Workers have decent labour conditions.	Agriculture is based on family farmers which have full access to capital and decision-making processes in gender equity. There is a social and economic proximity between farmers and employees.



Less decent working conditions

More decent working conditions

8.3 Youth empowerment and emigration

0	1	2	3	4
Young people see no future in agriculture and are eager to emigrate.	Most young people think that agriculture is too hard and many wish to emigrate.	Most young people do not want to emigrate, despite hard working conditions, and wish to improve their livelihoods and living conditions within their community.	Most young people (both boys and girls) are satisfied with working conditions and do not want to emigrate.	Young people (both boys and girls) see their future in agriculture and are eager to continue and improve the activity of their parents.

Less empowered youth

More empowered youth

8.4 Animal welfare (if applicable)

0	1	2	3	4
Animals suffer from hunger and thirst, stress and diseases all year long, and are slaughtered without avoiding unnecessary pain.	Animals suffer periodically/seasonally from hunger and thirst, stress or diseases, and are slaughtered without avoiding unnecessary pain.	Animals do not suffer from hunger or thirst, but suffer from stress, may be prone to diseases and can suffer from pain at slaughter.	Animals do not suffer from hunger, thirst or diseases but can experience stress, especially at slaughter.	Animals do not suffer from stress, hunger, thirst, pain, or diseases, and are slaughtered in a way to avoid unnecessary pain.

Less animal welfare

More animal welfare

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8. Human and social values

Element	Index	Score	
 **Human and social values**	**8.1 Women's empowerment**	**2**	Percentage of the element of Humand and social values: 2 + 3 + 2 + 2 = 9 9 / maximum score (16) = **56.3%**
	8.2 Labour (productive conditions, social inequalities)	**3**	
	8.3 Youth empowerment and emigration	**2**	
	8.4 Youth empowerment and emigration [if applicable]	**2**	

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9. Circular and solidarity economy

Element	Index
 **Reconnects producers and consumers and provides innovative solutions for living within our planetary boundaries while ensuring the social foundation for inclusive and sustainable development**	9.1 Products and services marketed locally
	9.2 Networks of producers, relationship with consumers and presence of intermediaries
	9.3 Local food system

9.1 Products and services marketed locally

0	1	2	3	4
No product/service is marketed locally (or not enough surplus produced), or no local market exist.	Local markets exist but hardly any of the products/services are marketed locally.	Local markets exist. Some products/services are marketed locally.	Most products/services are marketed locally.	All products and services are marketed locally.

Less local marketing

More local marketing

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9.2 Networks of producers, relationship with consumers and presence of intermediaries

0	1	2	3	4
No networks of producers for marketing agricultural production exist. No relationship with consumers. Intermediaries manage the whole marketing process.	Networks exist but do not work properly. Little relationship with consumers. Intermediaries manage most of the marketing process.	Networks exist and are operational, but don't include women. Direct relationship with consumers exist. Intermediaries manage part of the marketing process.	Networks exist and are operational, including women. Direct relationship with consumers exist. Intermediaries manage part of the marketing process.	Well established and operational networks exist with equal women participation. Strong and stable relationship with consumers. No intermediaries.

Long distance between producers and consumers

Short distance between producers and consumers

9.3 Local food system

0	1	2	3	4
Community is totally dependent on the outside for purchasing food supply and agricultural inputs and for the marketing and processing of products.	The majority of food supply and agricultural inputs are purchased from outside and products are processed and marketed outside the local community. Very few goods and services are exchanged/sold between local producers.	Food supply and inputs are purchased from outside the community and/or products are processed locally. Some goods and services are exchanged/sold between local producers.	Equal shares of food supply and inputs are locally available and purchased from outside the community and products are processed locally. Exchanges/trade between producers are regular.	Community is almost completely self-sufficient for agricultural and food production. High level of exchange/trade of products and services between producers.

Less local self-sufficiency

More local self-sufficiency

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9. Circular and solidarity economy

Element	Index	Score	
 **Circular and solidarity economy**	**9.1 Products and services marketed locally**	**2**	Percentage of the element Circular and solidarity economy: 2 + 2 + 1 = 5 5 / maximum score (12) = **41.7%**
	9.2 Networks of producers, relationship with consumers and presence of intermediaries	**2**	
	9.3 Local food system	**1**	

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10. Responsible Governance

Element	Index
Responsible and effective governance mechanisms are required at different scales (local, national, global) for sustainable food and agriculture	10.1 Producers' empowerment
	10.2 Producers' organizations and associations
	10.3 Participation of producers in governance of land and natural resources

https://www.ifoam.bio/en/pgs-general-questions

10.1 Producers' empowerment

0	1	2	3	4
Producers' rights are not respected. They have no bargaining power and lack the means to improve their livelihoods and develop their skills.	Producers' rights are recognised but not always respected. They have small bargaining power and little means to improve their livelihoods and/or to develop their skills.	Producers' rights are recognised and respected for both men and women. They have small bargaining power but are not stimulated to improve their livelihoods and/or to develop their skills.	Producers' rights are recognised and respected for both men and women. They have the capacity and the means to improve their livelihoods and are sometimes stimulated to develop their skills.	Producers' rights are recognised and respected for both men and women. They have the capacity and the means to improve their livelihoods and to develop their skills.

Less empowerment

More empowerment

10.2 Producers' organizations and associations

0	1	2	3	4
Cooperation among producers is non-transparent, corrupted or non-existent. No existing organisation or they do not to distribute profits transparently and/or equally nor do they support producers.	One organisation of producers exists but its role is marginal and support to producers limited to market access.	One organisation of producers exists and provides support to producers for market access and other services (e.g. information, capacity development, incentives…), but women don't have access.	One organisation of producers exists and provides support to producers for market access and other services with equal access to men and women.	More than one organisation exists. They provide market access and other services, with equal access to men and women.

https://www.ifoam.bio/en/pgs-general-questions

Less organized producers

More organized producers

10.3 Participation of producers in governance of land and natural resources

0	1	2	3	4
Producers are completely excluded from the governance of land and natural resources. There is no gender equity in the governance of land and natural resources.	Producers participate in the governance of land and natural resources but their influence on decisions is limited. Gender equity is not always respected.	Mechanisms allowing producers to participate in the governance of land and natural resources exist but are not fully operational. Their influence on decisions is limited. Gender equity is not always respected.	Mechanisms allowing producers to participate in the governance of land and natural resources exist and are fully operational. They can influence decisions. Gender equity is not always respected.	Mechanisms allowing producers to participate in the governance of land and natural resources exist and are fully operational. Both women and men can influence decisions.

Less participation — More participation

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10. Responsible Governance

Element	Index	Score	
 **Responsible Governance**	**10.1 Producers' empowerment**	**3**	Percentage of the element Responsible Governance: 3 + 3 + 3 = 9 9 / maximum score (12) = **75%**
	10.2 Producers' organizations and associations	**3**	
	10.3 Participation of producers in governance of land and natural resources	**3**	

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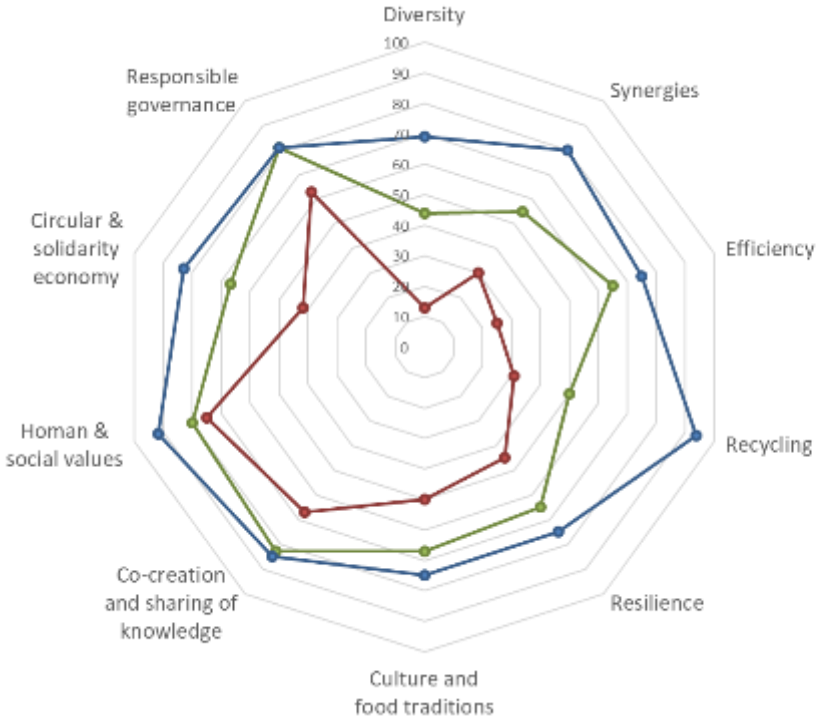
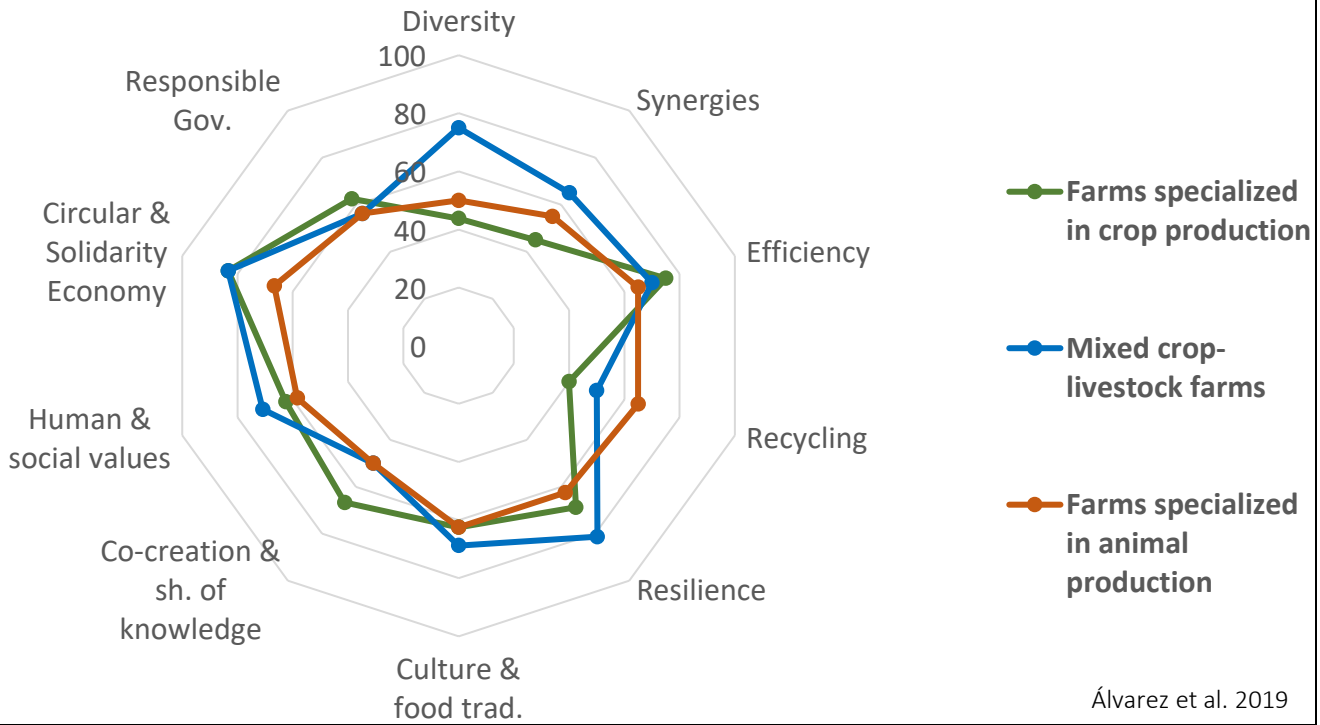
Step 1 CAET – results of 3 farms in Cuba



1) Conventional farm (tobacco monoculture) (CAET=44%)
2) Farm in transition to agroecology (CAET=66%)
3) Diversified agroecological farm (CAET=81%)

STEP 1 bis



Álvarez et al. 2019