ALiSEA
Agro-ecology Learning alliance in South East Asia

SUSTAINABILITY ASSESSMENT GUIDELINES

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PURPOSE OF SUSTAINABILITY ASSESSMENT

ALiSEA VISION

Sustainable development has been defined by FAO as "*the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable*". (FAO Council, 1989).

Sustainable development has numerous definitions and developing and implementing a sustainability assessment to measure the agroecological, social and economic impact of farming systems has proven very challenging. A wide range of methods are available, each of them pursuing a specific objective. Moreover, the specificities of each region make it even more complicated to use a method designed for a given region.

ALiSEA objective is to assess the **agroecological, social and economic sustainability** of innovative farms led by **young farmers** in the Mekong region. The focus is on sustainability objectives specific to agroecological farming systems.

The assumptions behind our method are the following:

-Agroecology

- Seeks to produce diversified and high quality food
- Optimizes and maintains biodiversity
- Enhance the ecosystem's fertility
- Limit the use of non-renewable resources by recycling existent nutrients and biomass
- Avoid contaminating the environment and people by eliminating the dependency on external synthetic inputs
- Contribute to the fight against global warming

- Agroecology is ecologically sound as agroecological approaches rely on low cost, locally available inputs and complementarities between the elements of agro-ecosystems (plants, animals, trees, soil, water)

- Agroecology is socially beneficial as it encourages farmers' participation, community building and it builds upon traditional and local communities knowledge in improving agro-biodiversity and local natural resources while increasing food availability and improving nutrition;

- Agroecology is economically beneficial, as it promotes fair, short distribution networks and a collaborative relationship between producers and consumers, while enhancing farmer's independence and reducing poverty.

Why focusing on young farmers? Young people are key actors in influencing the social norm among their communities. They are particularly sensitive to issues such as workers migrations, abandonment of agriculture, child labor, health…Targeting youth, especially in rural areas, can have a significant impact on

poverty alleviation and social integration, as they have proven to be good promoters of innovative solutions to tackle the issues mentioned previously.

We wish, through the use of simple indicators, to highlight the strength but also the weaknesses of agroecological farming systems and to encourage discussions amongst young farmers to accompany their transition towards more sustainability.

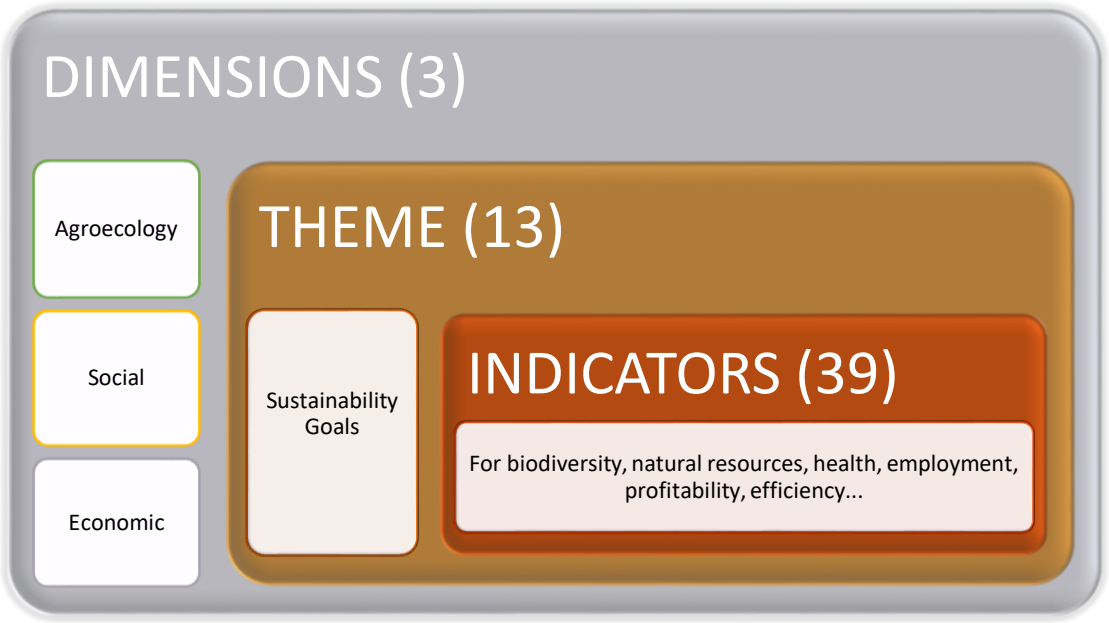
No single existing framework could be used per se, therefore ALiSEA team decided to design its own practical tool based on an existing method (IDEA) but adapted to fit the region requirements. ALiSEA aims to provide a transparent framework for assessing sustainability and seeks to furthering good practices.

The method has been prepared so that users of the tool and farmers involved in the process gain a clear understanding of the constituent components of sustainability and thus, better tackle their strength, weakness and progress towards sustainability.

FRAMEWORK

The ALiSEA Sustainability Assessment Framework begins with the three dimensions of sustainability: agroecology, social and economic. These dimensions are broad, encompass many aspects and are translated into a set of themes. Each theme is measurable through indicators. ALiSEA SA Indicators document provides the guidance for the application and calculation of these indicators.

Figure 1. ALiSEA SA Framework



Themes: these are distributed in a set of **13** core sustainability issues, or "Themes", with associated sustainability goals.

Indicators: these are distributed in a set of **39** indicators which identify the measurable criteria for sustainable assessment for the theme.

BACKGROUND

ALiSEA Sustainability Assessment is derived from an existing sustainability assessment tool called IDEA.

The IDEA method (Indicateurs de Durabilité des Exploitations Agricoles or Indicators of Sustainable Farm Development) was created upon request of the General Board for Education and Research of the French Ministry of Agriculture which, since 1996, aims at assessing and diagnosing the sustainability of agricultural systems. It was developed by a multidisciplinary team made up of researchers in agronomy, technical institutes, agronomy schools. Over the period 2003 to 2017, successive improvements in its formulation and weighting took place after its indicators' robustness, sensitivity and relevance were tested. IDEA is based on two rationales: a sustainable agriculture should be ecologically healthy, economically viable and socially fair and human. A sustainable agriculture should contribute on one hand to the sustainability of the territory in which it entrenches, and secondly, should provide global environmental services. Then, a sustainable farm is a farm which is viable, livable, transmissible and reproducible.

The newly released version 4 is based on the possibility of assessing the sustainability of an agricultural system by the quantification of technical, spatial, economic and human characteristics and by practices judged favorable to biophysical and social environments. Its structure is based on *three dimensions of sustainability: agro-environmental, economic and socio-territorial* (Vilain et al, 2008).

The 11 objectives of a sustainable agriculture taken into account in IDEA version 4 are the following:

1. Maintain natural resources (biodiversity, water, soil, air)
2. Maintain nonrenewable resources
3. Maintain/develop landscapes
4. Fight against global warming
5. Contribute to food security and sovereignty
6. Contribute to employment and to territory development
7. Promote animal health and welfare
8. Promote economic viability and continuity of the farm
9. Contribute to quality of life
10. Keep independence and autonomy
11. Promote ethical actions and commitments

The sustainability of a farm is based on a conceptual framework of IDEA taking into account the 11 objectives/stakes mentioned previously which are themselves based on the 5 properties of sustainability: capacity to produce and reproduce goods and services, robustness (resilience/adaptability/flexibility), territorial anchorage, autonomy, global responsibility.

The three dimensions are divided into themes on which 54 indicators are distributed. Indicators values are aggregated hierarchically by theme, so that each dimension is rated on a scale from 0 to 100. Indexes of the dimensions are not aggregated and the degree of sustainability of the farm is given by the smallest ratio obtained between the three dimensions. This approach avoids compensations between dimensions, but assumes tradeoffs among themes of the same dimension (Vilain et al, 2008)

IDEA method has proven efficient to compare production units with similar contexts in terms of production type, soil and climate. It has been widely adopted in Europe and has had more than 1500 applications in France from 1997 to 2007.

IDEA is an efficient method specifically adapted to the European context. Therefore, ALiSEA Sustainability Assessment had to be simplified and modified for two main reasons:

-provide references and an interpretation of the results suitable to the local context

-to enable users who are not familiar with assessment tools to get a clear understanding of the tool and be able to use it without heavy training

Therefore, ALiSEA SA provides an interpretation of the major themes of sustainability (Framework) and is a template for farm sustainability assessment. Indicators for each theme are proposed in order to facilitate measuring progress towards sustainability in a harmonized reporting format.

OBJECTIVES

With ALiSEA SA, the sustainability of a farm is assessed in terms of agroecological, social and economic sustainability. The purpose of ALiSEA SA is to assess farms led by young farmers in the Mekong Region on a common framework based on the three dimensions of sustainability. Using a harmonized approach contributes to making sustainable farms more measurable, verifiable and visible. ALiSEA SA results will be used for learning and communication purposes. Through this assessment the objective is to communicate on farming innovation, support the implementation of innovation networks, exchanges across farmers from different south east Asian countries.

SECTION 2. CHOICE OF INDICATORS AND CALCULATION

OVERVIEW

This section details the implementation of AliSEA SA. The final output of a Sustainability Assessment is the sustainability assessment by dimension and a spider web with all themes represented.

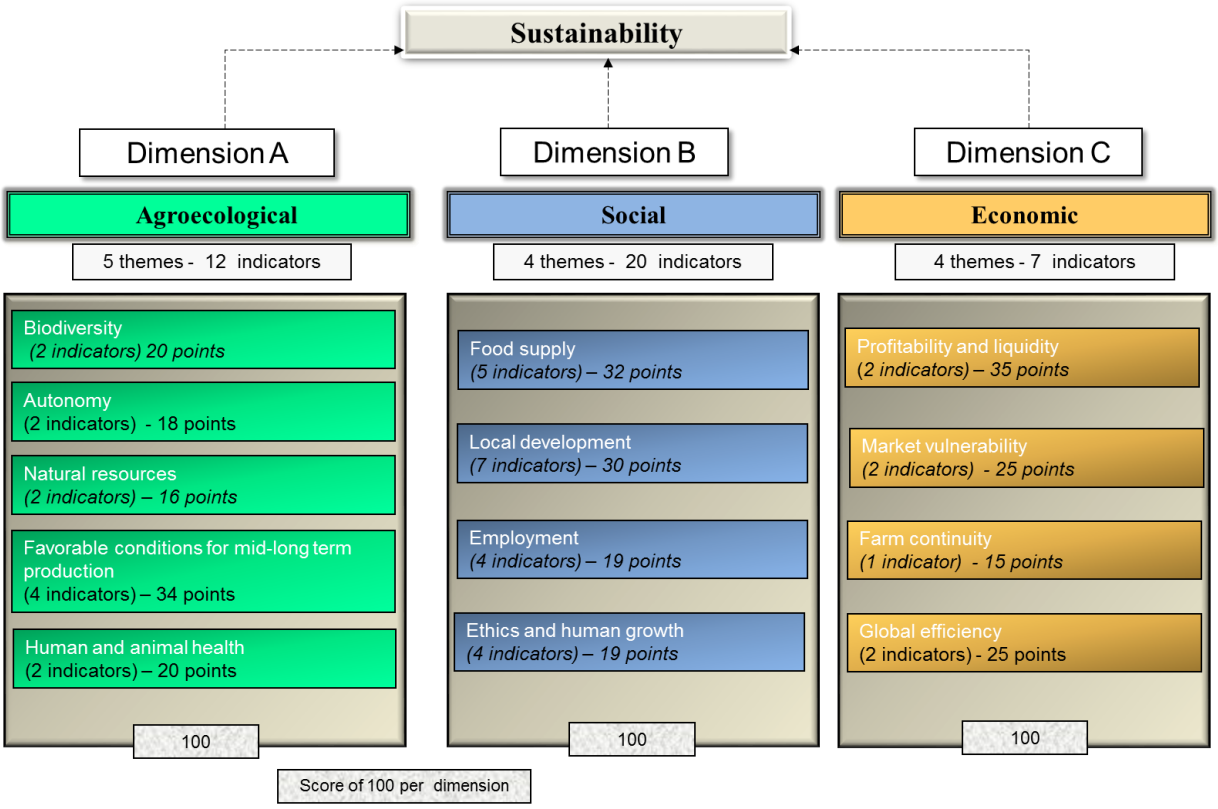
SELECTING INDICATORS

How are the indicators calculated?

General principles:

- System of evaluation based on quantitative and qualitative information
- System of points capped
- 3 dimensions with the same weight (0 to 100) split into themes
- Sustainability units determining the grading allocated to each indicator

Figure 2. Ratios of aggregate approach



For each indicator:

- Assignment of a maximum grade for each indicator to cap the total number of sustainability units
- Global grading: accumulated number of sustainability units granted for each indicator of a given dimension
- Grading meaning: the higher the grade, the more sustainable the farm for a given dimension

Indicator weighting

In order that all dimensions are weighted equally (score of 100 per dimension), it is necessary to weight indicators in instances where there are multiple indicators at the theme level. When themes only have one indicator, no weighting is necessary.

The indicators within the ALiSEA SA have varying weight in terms of their likelihood to fulfill the theme objective. Some indicators can be considered very accurate, because the information collected can come from a visual observation on the farm (diversity of species, biodiversity management, maintain plant protection system…). Some indicators can be less accurate, as they give only a good estimate of the situation or come from farmer's allegations (many social indicators rely on farmer's allegations as well as economic indicators as there is no reliable accounting system for farms in the considered region).

For these reasons, ALiSEA SA is trying to take these limitations into consideration and to provide a relevant weight according to the indicator relevance.

A list of all indicators can be found in the separate document "ALiSEA SA Indicators". In this document, each indicator is detailed in terms of: an overall description; unit of measurement; rating; and limitations, if any.

DATA COLLECTION

Data collection is the process of gathering and measuring information on indicators in order to evaluate outcomes.

Data collection guidelines

When collection information on a field survey, basic information regarding the farm should be documented for the next step. This includes information such as the farm name, location, land size and distribution and brief background of the farm.

For the next step of collecting data for indicators, for some indicators, data collection can be difficult. Most of the information are collected via a farmer interview and a personal inspection of farm and fields. This means that there is a part of subjectivity coming from the personal inspection that might be reflected in the ALiSEA SA results.

Low levels of documentation for smallholder farmers can also have an influence on data quality and SA results. This is specifically the case for indicators in the economic dimension as farmers do not keep proper accounting data that can be consulted. Data collected for economic indicators mainly rely on estimations.

These estimations are made by the farmer based on previous year's results (yields, quantity sold, prices…). Estimations can also be made for quantities: example: quantity of fuel per year, and assume their carbon emissions impact from this estimate.

Focus group: smallholders farm

ALiSEA SA aims to be applicable to both large and small-scale farms. However, ALiSEA focus group is the smallholders farm, family-operated farm. Indeed, out of the 2.5 billion people in poor countries living directly from the food and agriculture sector, 1.5 billion people live in smallholder households. Smallholders provide up to 80% of the food supply in Asian and Sub-Saharan Africa (FAO, 2012). Smallholders farmers are among the most vulnerable as they face many challenges like volatile weather due to the effects of climate change, volatile prices, access to land, access to financial services.

ALiSEA believes that smallholder agriculture plays a significant role in food security and sustainable development. Such farming systems can help eradicating hunger and poverty. Moreover, this agriculture is of cultural and social importance and can also be a transition engine to innovative access to markets closely linking producers and consumers.

There is no universally agreed definition of family farms as definitions depend on context, production, geography and other factors. These can be based on size, assets and/or other factors, such as dependency on family labor.

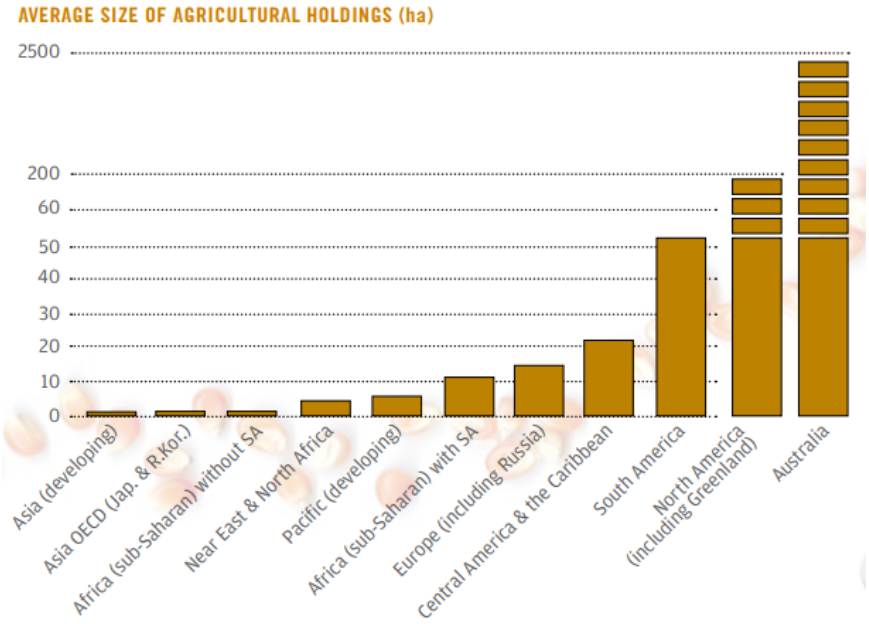
ALiSEA definition of smallholders is the definition adopted for the 2014 International Year of Family Farming: "*Family farming (also family agriculture) is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. The family and the farm are linked, coevolve and combine economic, environmental, social and cultural functions." (FAO, 2014)*

ALiSEA SA requires that smallholders meet all three of these criteria:

- Size: manage areas considered small for their production and region
- Mechanization: use no or little mechanization
- Labor: use mainly family labor for production

Regarding the size, for the purpose of ALiSEA SA and based on the average size of agricultural holdings in ha in developing Asia, a maximum limit of 10ha per smallholders is adopted.

Figure 3. Average Size of Agricultural Holdings



Source: FAO (2012)

REPORTING

The last step consists of combining the documentation from the previous steps into a Sustainability Assessment Report.

FINAL REPORT

Sustainability is a complex topic and even with aggregation of the indicators and themes, understanding all of this data can be challenging and difficult to communicate. A critical review enhances the quality, credibility and transparency of the assessment. The information and ratings included in a report/case study should be supported by documentation that could be reviewed and understood by someone other than the report author.

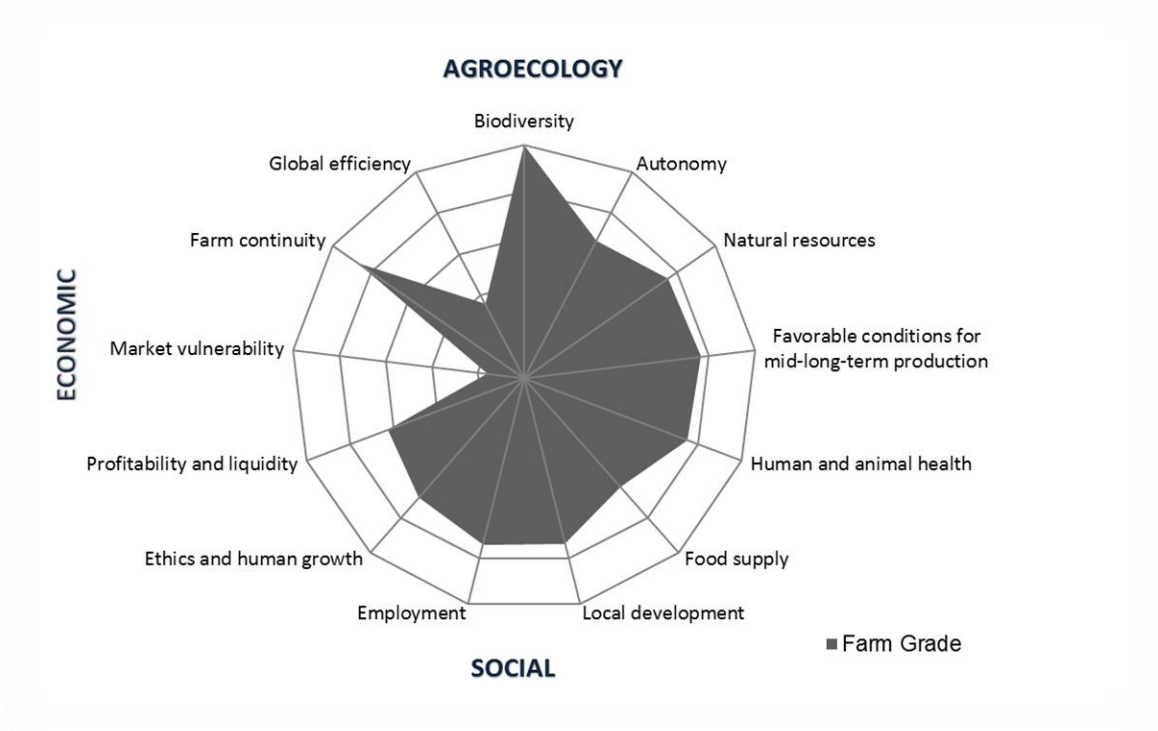
Visualization

Data visualizations helps to better understand the concepts and relationships between themes in the three dimensions. Data Visualization is a method of presenting information in a graphical form.

A possible illustration of the sustainability assessment is provided in Figure 4. This visualization of the ALiSEA SA sustainability assessment is depicted in the polygon of a hypothetical farm. A line connects theme according to their respective grade, forming a shape in grey color that represents the sustainability result for the hypothetical farm.

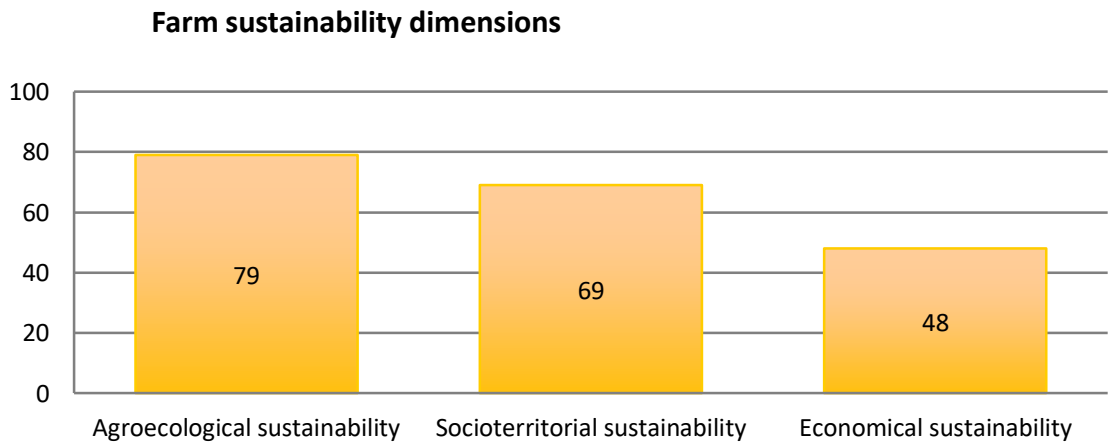
If the line is close to the center of the spider web, the indicators in the theme did not received a good grade. If the line is close to the border of the spider web, the indicators in the theme received the best grade possible.

Figure 4. Sustainability assessment spider web



Another way of looking at the results is through each dimension score. A possible illustration of the sustainability assessment by dimension is provided in Figure 5.

Figure 5. Sustainability assessment per dimension



USE OF RESULTS

Sharing of results

Farms involved in an ALiSEA SA will have the possibility of seeing their results and exchanging best practices among farmers in the same region during workshops. It is also possible to use the SA report to identify areas of improvement.

ALiSEA SA is intended primarily for external communication about sustainability assessment of organic small-scale farmers in the Mekong region. It is a tool for learning and communication purposes.

ALiSEA SA is not intended for business-to consumer communication.

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