

ICLF PROTOCOL

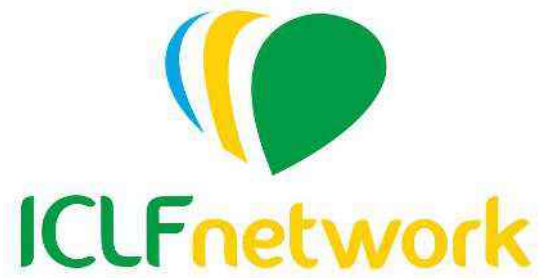


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1. ICLF – WHAT IS?

Crop-livestock-forestry integration (“Integração Lavoura-Pecuária-Floresta” ICLF) is a sustainable production strategy that integrates different productive, agricultural, livestock and forestry systems within a single area. It can be done in intercropped cultivation, in succession or in rotation, so that there is mutual benefit between all activities.

This sort of integrated system aims to optimize land usage, raising productivity levels, diversifying production and generating quality products. This reduces the pressure on the opening of new areas, while contributing to sustainability in agribusiness.

ICLF can be used in four different configurations, combining two or three modules in a production system: agropastoral system (ICL), agrosilvopastoral system (ICLF), silvopastoral system (ILF) and finally, the silviagricultural system (ILF), as shown in the image below:



Figure 1 – ICLF arrangements

Source: ICLF Network, 2020

Provided that climate, soil and relief conditions are not restrictive, ICLF can be adopted in any rural property profile. Prior to starting an ICLF project, the producer must consider some important points, such as its suitability, the existence of a market for the goods it intends to produce, the logistics for harvesting and arrival of supplies, the availability of labour, the machinery available and the availability of qualified technical assistance. That is, ICLF systems must be planned, taking into

consideration the various socioeconomic and environmental aspects of the production facilities.

The definition of the type of ICLF to be adopted, the crop rotation strategy, the spacing between tree yields or the species used (native or exotic), should it involve the tree component, shall be made based on a general analysis of the internal and external scenario of the property.

In Brazil the ICLF technology developed by EMBRAPA is already implemented in the 6 Brazilian biomes (Figure 2). The arrangement definition, adequate management and species chosen for the system takes into consideration the producer profile and the regional peculiarities of the biome and the farm.



Figure 2 –ICLF System in the 6 Brazilian biomes.

Source: ICLF Network, 2020

To assist in these decision-making processes and guide the development of a project suited to the characteristics and objectives of each property, the ideal is to

draw on the support of a trained technical assistance or rural extension professional with knowledge in integrated agricultural production systems.

The technical assistance and rural extension (“*Assistência Técnica e Extensão Rural*” - ATER) companies are an important asset. Another option is to hire a professional who has participated in training programs under Embrapa's or ICLF NETWORK's coordination. In this case, the interested party should seek out the nearest Embrapa Unit and request the appointment of a technician who has been trained in ICLF, or contact ICLF NETWORK website.

2. ICLF BENEFITS

According to estimations of the Food and Agriculture Organization of the United Nations (FAO), agricultural production will need to grow 70% to feed the growing global population which will top 9.7 billion by 2050. In this regard, agriculture and cattle raising is one of the most promising sectors of the Brazilian economy and an important factor in the development of the many regions of the country. Given that, in addition to producing food for domestic consumption, Brazil also holds a great responsibility to the world, as it is the main region with conditions to ensure, as well as food, fiber and bioenergy for the planet. Thus, agriculture will have to be increasingly productive, efficient, sustainable, innovative and resilient (Embrapa, 2019).

In particular, the Brazilian agricultural sector has shown itself to be attentive to technological trends that minimize the negative impacts of agricultural activity and benefit production. Global changes, such as climate change and global warming phenomena, also reinforce the attention of researchers and farmers, since the pressure from civil society and international organizations for practices that have mitigation potential of these phenomena is increasing.

In this context, the Crop-Livestock-Forestry Integration (ICLF) system stands out as the most feasible alternative to meet the demand for population growth in the face of global changes. ICLF arose from the realization that agricultural sustainability (including agriculture in the strict sense, livestock and forestry) can only be achieved

if the production systems used in it are technically efficient, environmentally appropriate, economically viable and socially accepted (Leite et al., 2017).

ICLF as sustainable production presents its results through the synergistic effects between the agroecosystem components, including environmental adjustment and economic viability. Hence, it is evident that in order to perform ICLF on a property, it is necessary that the property is environmentally appropriate, in the process of adjustment or, at least, with the intention of adjusting to a new model of agricultural production.

In its frame of reference, the ICLF adopts the concept of sustainable agriculture used by FAO, as defined below:

Sustainable agriculture is the management and conservation of natural resources and the guidance of technological and institutional changes that ensure the fulfilment of human needs for the present and future generations. [...] preserves soil, water, animal and vegetal genetic resources and microorganisms, and does not degrade the environment; it is technically appropriate, economically feasible and socially acceptable (BALBINO et al., 2012).

Many research efforts have been made recently to assist producers in optimizing fodder production, nitrogen biological fixation, cycling of nutrients via straw and animal excrement, and proper pasture management to increase livestock production. It is noteworthy that well-managed pastures can contribute by refilling the watersheds, filtering the water as it moves through the soil, ensuring conservation and therefore avoiding soil degradation. By essence, the maintenance of vegetation cover and diversity of species in pastures minimizes soil erosion, nutrient leaching to underground waters or drainage to surface waters, allowing greater accumulation of organic matter in the soil and retention of more water and nutrients, resulting in benefits to the environment.

The ICLF practice set embodies low carbon technologies in its systems, a powerful development tool for regions that have areas and soils in degradation. It also allows the sustainable recovery of the productive potential of these sites and increases efficiency in regions with higher technology, by enhancing the effect of management, such as No-till plantations and crop rotation, bringing great

advantages for both realities, discouraging deforestation of areas and enhancing production (Leite et al., 2017).
















Low carbon agriculture is based on production methods and technologies with a high degree of sustainability, such as: low soil movement systems that include soil and water conservation practices, such as no-till plantation, and technologies that promote the substitution of high emission capacity of greenhouse gases (GHG) supplies. This is the case, for example, with the use of nitrogen biological fixation (N) to replace the use of chemical nitrogen, and with the improvement of the quality of pastures and / or the use of products in animal feed that reduce methane emissions (CH₄) by cattle, sheep and goats, as well as in the animal sewage treatment. The use of the low-carbon agriculture model deeply values the forest component on the property, both from the point of view of preservation and the interaction of forest species in agricultural and livestock activities (Leite et al., 2017).

The provision of grains, meat and milk at a lower cost can be achieved through the synergy between farming and pasture. The synergy is accomplished by integrating pastures with crops in the same area and enables the soil to be exploited all year round, increasing rural productivity (Balbino, et al., 2011). When the forest component is included, fibre and energy production also occurs, in addition to timber and non-timber products from the same area, optimizing the biological cycles of plants and animals, the use of supplies and their respective waste. The process also aims to maintain and reconstitute forest coverage, recover degraded areas, adopt good agricultural practices (GAP) and increase efficiency with the use of machinery, equipment and labour, thus generating employment and income and improving social conditions in rural areas whilst reducing impacts on the environment.

The ICLF is expected to be present on an increasing number of rural properties in the near future, thus enabling increased production along with the conservation of natural resources, key to a sustainable economy development in the 21st century.

The ICLF strategy is above all the most important tool for establishing sustainable and low carbon agriculture on farms. Hence, it is through its implementation that several agronomic, socioeconomic, ecological and environmental benefits can be achieved. The main benefits of the ICLF system are presented in Table 1:

Table 1 - ICLF Benefits (Source: ICLF Network, 2020)

 <p>Increase in net income allowing for greater producer capitalization.</p>	 <p>Production of grain, meat, milk, timber and non-timber products increased in the same area.</p>	 <p>Quality improvement and conservation of the soil's productive characteristics.</p>
 <p>Possible application on rural properties of all sizes and profiles.</p>	 <p>Improvement of animal welfare due to greater thermal comfort.</p>	 <p>Pressure reduction by opening new areas with native vegetation.</p>
 <p>Biodiversity maintenance and agricultural sustainability.</p>	 <p>Optimization and enhancement of soil nutrient cycling.</p>	 <p>Decrease in the use of seasonal labour in the countryside and rural exodus.</p>
 <p>Greater efficiency in the resources usage (water, light, nutrients and capital) and energy balance enlargement.</p>	 <p>Better optimisation of processes and production factors.</p>	 <p>Creation of direct and indirect jobs.</p>
 <p>Improvement of farmers' public image before society.</p>	 <p>Economical stability with lower risks and uncertainties due to production diversification.</p>	 <p>Mitigation of greenhouse gas emissions.</p>

3. ICLF NETWORK

ICLF Network Association is formed and co-funded by private companies and by Embrapa. It started in 2012 and its goal is to accelerate a broad adoption of crop-livestock-forestry integration ("ICLF") technologies by rural producers as part of an effort aimed at the sustainable enhancement of Brazilian agriculture.

ICLF Network currently supports a network with 16 Technology Reference Units (*"Unidade de Referência Tecnológica"* - URT) and 12 Research and Technology Reference Units (*"Unidade de Referência Tecnológica e de Pesquisa"* - URTP), spread among Brazilian biomes and engaging the participation of 22 Embrapa Research Units (Figure 3)..

In 2018 ICLF Network became an association. The new legal structure is aiming at expanding the group's activities and facilitating the entry of new companies interested in the project. The expectation is that, in addition to resources allocated by the participating companies, international funds can be raised.

In this new stage, ICLF Network will continue the technology transference work, technical assistance and communication training that is already being conducted, pursuing to improve it. Moreover, it will focus on internationalization, adding value through rural property certification and innovation.

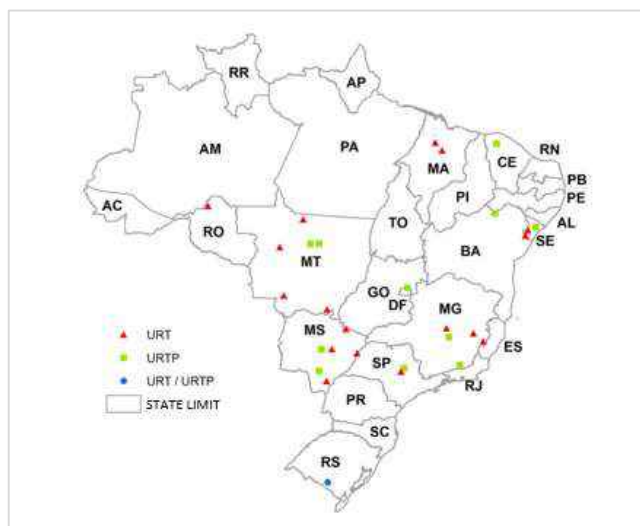


Figure 3 - URTs e URTPs locations supported by ICLF Network.

Source: ICLF Network, 2020

4. ICLF PROTOCOL

ICLF arose as a solution for recovering pastureland, yet today it is a sustainable production method. ICLF was developed by EMBRAPA, the Brazilian Agricultural Research Corporation, which has extensive experience in integration systems in many Brazilian biomes, therefore the producer can count on all the technological and scientific apparatus developed by it, as well as the guidance of trained and highly skilled technicians to provide all the necessary support. Following the ICLF protocol is acknowledging Brazil's technological potential and valuing the intellectual property of EMBRAPA and its professionals.

The ICLF protocol was designed with the purpose of adding value to the producer, distinguishing his property and his products through the assurance of sustainable production, based on the union of good practices in the conducting and the management of integrated production systems, so that there is synergy, balance and mutual advantage among the components of each of the integration arrangements, whether agropastoral, silvipastoral, silviagricultural or agrosilvipastoral.

Unlike a conventional certification protocol, the ICLF protocol introduces new elements that provide dynamic property monitoring throughout an entire cycle, starting with the assessment step, through an open checklist, carried out by technicians accredited and trained by ICLF Network's training and homologation program, however, What makes this certification special is the fact that the property will remain tracked, in other words, even after being certified to obtain a satisfactory result, the property will have its evaluation continued by a monitoring system equipped with technologies capable of highlighting possible deviations and improvements, in addition to a specialized support team that will handle all the evidence generated by the system. These elements are combined to obtain the confidence index, or level of adherence of the property to the protocol, herein referred to as TrustScore.

A good TrustScore reports to society whether it is a property that can be productive and at the same time sustainable, because it shows through good performance

indicators the concern towards the environmental, social and economic aspects and the inherent laws and practices of its productive activities.

The property certified by ICLF Network will have a technological support platform, which will assist the producer in managing and controlling their production processes, generating greater predictability, in order to contribute to their success and the permanence of the property title proven to be sustainable through the use of ICLF technology.

4.1. OBJECTIVES AND VALUE OF THE ICLF PROTOCOL

Below are the objectives that ICLF Network intends to achieve when generating the ICLF Protocol:

- To ease the producer's understanding of the necessary measures for the adoption of ICLF technology, which, according to its own definition, is capable of integrating different systems of production, agriculture, livestock and forestry, within the same field
- Show society the value of sustainable agriculture;
- Provide the producer with updated information on his/her property, enabling him/her to correct failures and consequently increase productivity and better use of resources, lowering the risks associated with the production process;
- Assist the producer on the necessary fulfilment of all legal requirements applicable to the property, to the people who work on it and to all the activities performed on it;
- Instruct the producer on the importance of following technical recommendations from technicians and experts;
- Inform the producer that performance and quality indicators will be created to assess the level of adherence to the ICLF protocol requirements and that

the results pointed out by the indicators will generate the (TrustScore) and this level of adherence may be a reference for the society..

- Be a benchmark facilitator for credit, insurance, discounts and services access;
- Enable financial and commercial innovation, prioritizing the sustainable management of agribusiness, namely green and climate finance.

Through these objectives we will be able to attain the following values:

- Optimisation and enhancement of soil nutrient cycling;
- Improvement of soil quality and preservation of its productive characteristics;
- Maintenance of biodiversity and sustainability of agriculture and livestock;
- Improvement of Animal Welfare as a result of the thermic comfort and better ambience;
- Production diversification, providing greater economic security for the property;
- Increased production of grains, fibers, meat, milk and timber and non-timber products;
- More efficient use of natural resources;
- Reduced pressure to open new areas with native vegetation;
- Decrease in the seasonally use of labour;
- Creation of direct and indirect employments;

- Flexibility, which allows adaptation to different productive scenarios;
- Labour Compliance;
- Environmental Compliance;
- Adequacy of producer credit risk analysis protocols and their warranties, improving access to higher quality credit.

4.2. ICLF PROTOCOL PILLARS

The ICLF Protocol is based on the verification of good management practices within the Crop, Livestock and Forestry components, the evidence of Integration and synergy between the combination of these components and the quality of management performed by the property, which will result in sustainability through social, environmental and economic gain, not to mention productive transparency, animal welfare and the law compliance.

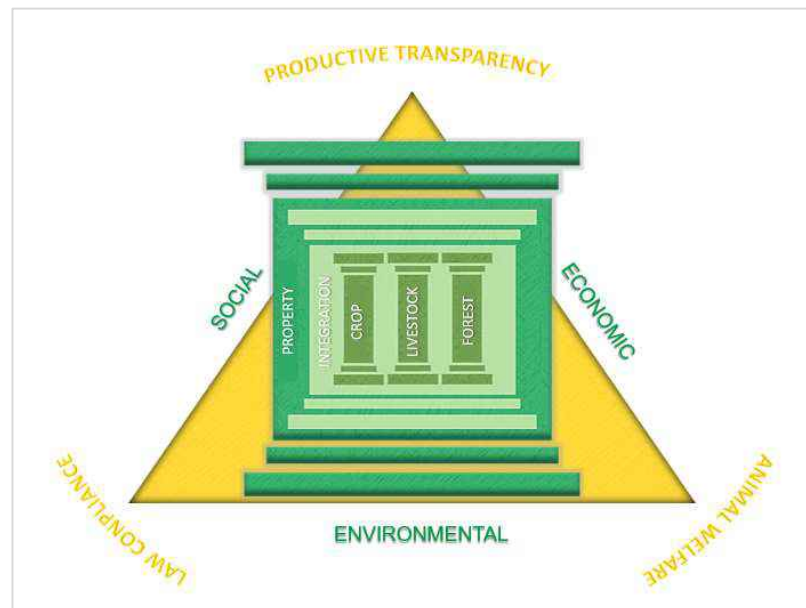


Figure 3 –ICLF Protocol Pillars

Source: Author

5. CHECKED ITEMS IN THE ICLF PROTOCOL- INDICATORS

The verification points (Crop, Livestock, Forestry, Integration and Property) shown below, as well as the sub-items of each of them, shape the property performance indexes based on the ICLF PROPERTY EVALUATION CHECKLIST, included in APPENDIX A of this document. Furthermore, each question in the checklist is evaluated from the perspective of sustainability and legal, ethical, transparent and efficient management.

5.1. SUSTAINABILITY INDICATORS

ASPECT
Social
Environmental
Economic
Ethical
Efficiency
Legal
Transparency

5.2. VERIFICATION POINTS IN THE CROP COMPONENT

1.0	CROP
1.1	Agricultural Supplies
1.2	Natural Resources
1.3	Carbon Uptake

5.3. VERIFICATION POINTS IN THE LIVESTOCK COMPONENT

2.0	LIVESTOCK
2.1	Veterinary Supplies and Raw Materials
2.2	Animal welfare and health
2.3	Animal Transport, slaughter and control

5.4. VERIFICATION POINTS IN THE FORESTRY COMPONENT

3.0	FOREST
3.1	Forestry management
3.2	Mitigation of GHG Emissions
3.3	Own Generation

5.5. VERIFICATION POINTS IN THE INTEGRATION COMPONENT

5.0	INTEGRATION
5.1	ICLF Sinergy
5.2	Income Generation and Diversification
5.3	Property Value
5.4	Food Production Safety

5.6. VERIFICATION POINTS IN THE PROPERTY COMPONENT

4.0	PROPERTY
4.1	Energy Consumption
4.2	Own generation, use, reuse and autonomy
4.3	Soil Quality
4.4	Water Quality
4.5	Biodiversity Conservation
4.6	Restoration and Environmental Commitment
4.7	Product Quality
4.8	Training and Qualification
4.9	Employment Offer
4.10	Employment Quality
4.11	Capital Share
4.12	Environmental and Personal Health
4.13	Occupational Health and Safety
4.14	Management Profile
4.15	Marketing Condition
4.16	Waste Disposal
4.17	Chemical Supplies Management
4.18	Institutional Relations

6. STEPS TO JOIN THE ICLF PROTOCOL

The crop-livestock-forestry integration in any of its arrangements, may be implemented on properties located in the different Brazilian biomes, however, the properties must meet some basic prerequisites in order to join the ICLF Certification Program. Thus, the steps that the producer should take to join the ICLF protocol are listed below.



Figure 4 – Steps to Subscribe to ICLF Protocol

Source: Author

I. Subscription

The first step is the indication from the producer about his/her interest in joining the ICLF Certification Program, to do so, simply fill out the TERMS OF ACCEPTANCE TO THE ICLF CERTIFICATION PROGRAM available on the ICLF NETWORK website for downloading. The form can be submitted via email or WhatsApp informed on ICLF NETWORK website (<https://redeilpf.org.br>). Alternatively, the electronic version of the subscription form available on the ICLF NETWORK webpage can be filled out

II. Pre-diagnosis of the property

After filling in and submitting the TERMS OF ACCEPTANCE TO THE ICLF CERTIFICATION PROGRAM, the producer must await the result of the pre-

diagnosis of the property, which will check at an early stage whether it is in an initial condition to proceed with the ICLF Certification Program, taking into account the information provided in the subscription form together with the analysis performed by the technical team of ICLF NETWORK, the diagnosis being totally concluded only after a visit by the evaluator / auditor to the property to apply the ICLF PROPERTY EVALUATION CHECKLIST (See APPENDIX A);

III. Initial Evaluation

Once the property has been pre-diagnosed, the producer will be notified and a visit will be scheduled to apply the ICLF PROPERTY ASSESSMENT CHECKLIST (See Appendix A).

On the arranged date, the producer will receive the visit of a technician accredited and trained by ICLF NETWORK qualification and homologation program, duly identified, who will follow the rite with an introductory meeting to align expectations and clarifications, following the sequence for evaluation / audit. Based on the pre-registration information the evaluator / auditor will have knowledge of which or what types of ICLF arrangements the property holds, which optimizes the process avoiding evaluating items not applicable to the context, for example, if the property does not hold the forestry component, it makes no sense to submit questions about FORESTRY to the producer or person in charge. During the evaluation phase the auditor / evaluator may record the evidence collected through observations, images and copies of documents that will form the final report for subsequent submission to the producer.

IV. Conclusion of the Initial Evaluation

Once the evaluation/ audit has been completed, a digital intelligence platform will automatically receive the information from the ICLF PROPERTY EVALUATION CHECKLIST, generating the result.

The evaluator/auditor then schedules a meeting with the property manager at which he/she will show the final report of the initial evaluation, showing all the points of improvement identified, as well as the initial TrustScore obtained by the assessed property.

The evaluation is called initial, because even after it is completed, the property remains monitored by the monitoring system, which receives information from satellites, sensors, weather stations, corporate governance tools and the management of items assessed as non-compliant updated by the producer within the platform. All this information will be verified by technical support team experts and, after reassessment, may impact the TrustScore property positively or negatively.

V. Certification

The producer that meets an initial minimum level of adherence to the ICLF protocol on evaluated items receives the certification. If the property does not meet the minimum TrustScore required to qualify as an ICLF property, it will not receive the ICLF Certificate, however, the producer will have access to the final report of the initial assessment and its performance indicators, being at his discretion to address the points of improvement and then submit to a new assessment.

The certified property will receive at the end of the meeting a BOOK containing the following items:

1. Certificate;
2. Checklist with the property results;
3. Performance Charts;
4. Evidence Report;
5. Soil analysis;
6. Technical recommendations based on soil analysis;

7. PROPERTY MONITORING AND FOLLOW-UP

After going through the stages that configure adherence, pre-diagnosis, initial evaluation, conclusion of the initial evaluation and certification, certified producers will have access to a Platform, where they may follow the indicators of their property, besides monitoring the climate and production data made available by the

technological platform, being also able to deal with the points identified in the checklist as (I)insufficient and (M)improvement and attach evidence for analysis and evaluation by the specialized support team, this is a distinction compared to a conventional audit, as the open checklist combined with the intelligence of the platform allows such flexibility.

The Technology Platform together with the BOOK will assist the producer in identifying opportunities for continuous improvement of their processes, targeting social, environmental and economic development.

The ICLF protocol properties will have a powerful tool to help the producer by providing data such as:

- TrustScore
- System of Integration Informed - SID;
- System of Integration Monitored - SIM;
- Balance of Emissions;
- ICLF indicators described in Item 4 of this document;
- Sustainability Indicators;
- Satellite images;
- Soil Quality;
- Vegetative Growth;
- Rain levels;
- Temperature;
- Animal Welfare;
- Deforestation

The purpose of all this caution is to provide greater security to the producer, who will have more knowledge about his property, generating more predictability and consequently lower risk in production, labour, environmental, social and economic.

8. TRUSTSCORE?

TRUSTSCORE is a confidence index that reflects the level of adherence of a property to the ICLF protocol.

8.1. How is TrustScore Obtained?

Initially the property is subject to an evaluation/audit through the execution of the ICLF PROPERTY EVALUATION CHECK LIST (See Appendix A), in which the initial adherence of the property to the ICLF protocol is evaluated.

Each question in the checklist has a weight that will be used to compose the result of each of the evaluated pillars and sub-items, as well as all the sustainability indicators (social, environmental and economic), along with indicators of productive transparency, animal welfare and legal compliance. The result of the initial evaluation will be obtained through the arithmetic average of the results of all items evaluated in the Checklist.

The dynamism of property monitoring and producer actions, which allow the platform to generate events capable of positively or negatively influence the property's confidence index, is what distinguishes the ICLF protocol from conventional certification. In other words, the items evaluated as (I) insufficient or (M) improvement in the execution of the checklist, are identified in the technological platform as ATTENTION POINTS, being these subject to actions by the property, should this be of interest. Hence, if the property chooses to address all or part of the Attention Points, and if these are very well evidenced, its TrustScore can be enhanced.

Property monitoring may also create evidence that can negatively influence TrustScore in detecting deviations, such as illegal deforestation, lack of ICLF synergy, erosion caused by inadequate soil management, etc.

Each event holds a weight on the pillars that can influence TrustScore's outcome over time, and TrustScore's own track record is also a major factor in the composition of TrustScore's outcome through the moving average.

The following image illustrates the composition of TrustScore:

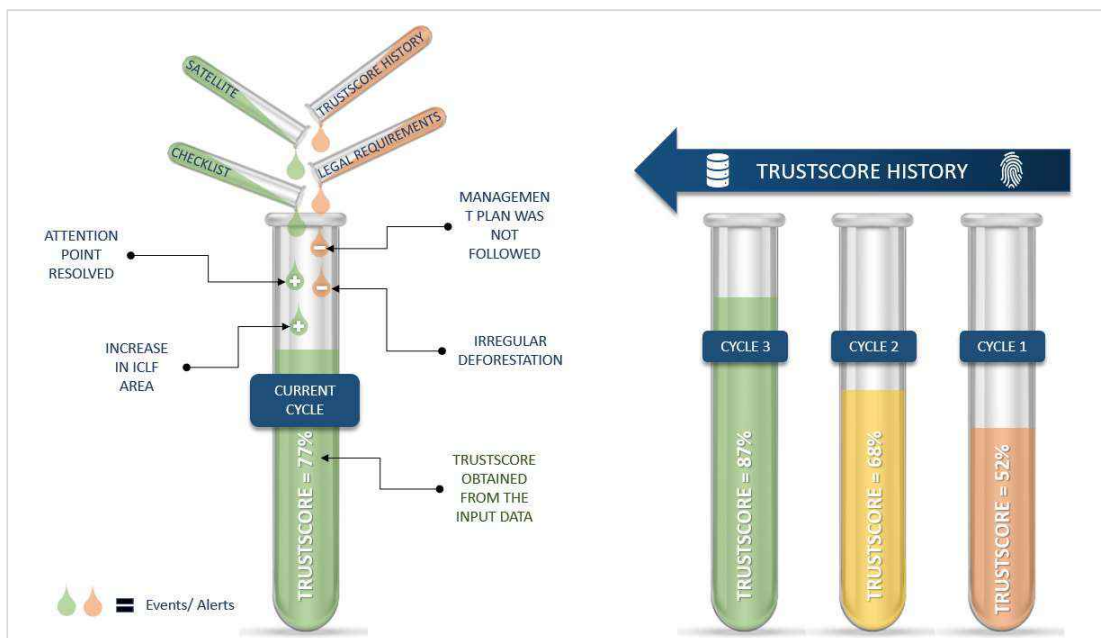


Figure 5 – TrustScore components illustration

Source: Author

8.2. Who benefits from TrustScore?

Consumers (Traders e Wholesalers) – using TrustScore as a decision-making factor when purchasing products. Serious companies tend to prioritise products with assured origin and quality guarantee, bringing clear benefits to their property;

Producers – With the ever-increasing demand for products with guaranteed origin and quality, producers participating in ICLF NETWORK Certification program are ahead of the market, absorbing this growing market demand by using TrustScore as a differentiator among competitors, taking as sales arguments the advantages of the program over self-reported market information.

Access to insurance, resources and facilitated credit, since the entire production process will be more transparent and therefore easier to monitor, having its competence attested by an independent evaluation programme;

BANKS – through TrustScore, banks will have greater access to data, providing better comfort in arranging specific lines of credit. More predictable processes have lower risks, and are less susceptible to variation due to market instabilities;

INSURANCE COMPANIES – through TrustScore, insurance companies will have better ability to assess risks and claims by analyzing the ownership history and weather indicators provided by TrustScore's generating platform.

GOVERNMENT – as this is a self-regulatory program, the initiative is in the best interest of governments, as ICLF NETWORK certification program absorbs part of the fiscalization that is currently performed by the ever scarcer and under-resourced control agencies. TrustScore can be used as an index of differentiation, and as an argument for providing subsidies and incentives, aiming to promote regulation in the sector.

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APPENDIX A – ICLF PROPERTY EVALUATION CHECKLIST

1.0	CROP
1.1	Agricultural Supplies
1.1.1	Are the supplies used in the crops registered and permitted by the control agencies?
1.1.2	Is there integrated pest management? Is it followed?
1.1.3	Is the frequency and dosage of application of pesticides under technical guidance and followed?
1.1.4	Are the supplies used in the CROP origin certified?
1.1.5	Does the producer use precision farming technology (to rationalize the use of supplies)?
1.2	Natural Resources
1.2.1	If the producer makes use of irrigated planting, does he/she control water consumption?
1.2.2	If the producer makes use of the water in the post-harvest process, does he/she have any quality and flow control of the water used in the process?
1.2.3	Did the water consumption remain at the same level or less than the previous period?
1.3	Carbon Uptake
1.3.1	Does the producer use any technique for soil carbon uptake?

2.0	LIVESTOCK
2.1	Veterinary Supplies and Raw Materials
2.1.1	Do the veterinary supplies used in animal breeding have a record and are permitted by the control agencies?
2.1.2	Is the dosage and frequency of use of these supplies made under technical guidance and followed?
2.1.3	Do animals receive adequate nutrition and supplementation that meets physiological needs throughout the breeding cycle?
2.1.4	Is there any pasture technology that guarantees a better animal nutritional quality?
2.1.5	If the producer produces his own feed, check if there was technical guidance and if it is being followed.

2.1.6	Do the supplies used in livestock farming have certification of origin?
2.2	Animal Welfare and Health
2.2.1	Do the animals have adequate space to sleep, avoiding discomfort from overpopulation?
2.2.2	Does the pasture site provide shade for the animals, offering adequate thermal comfort?
2.2.3	Do animals have food availability throughout the breeding cycle?
2.2.4	Do the animals have fresh water suitable for consumption?
2.2.5	Does the Producer have a schedule or control for the animal health management?
2.2.6	Does the facility where the animals are kept offer hygienic conditions and mitigate the risk of accidents?
2.3	Animal Transport, Slaughter and Control
2.3.1	Is the legislation governing the transport, purchase and sale of animals complied with?
2.3.2	Is there a particular concern regarding the transport of animals?
2.3.3	Does the producer follow an ethical conduct for animal slaughter? When the slaughter is performed by a third party, check if the producer directs the animals to slaughterhouses or frigorific that follow the ethical conduct of animal slaughter.
2.3.4	For animals bred in systems of integration with the forestry, does the producer control whether the final product matches in quantity and quality with what left the farm?
2.3.5	Is there traceability of the property animals bred in the ICL, ILF or ICLF integration area?

3.0	FORESTRY
3.1	Forestry Management
3.1.1	Is tree management suitable for conducting ICLF?
3.1.2	Is the arboreal spacial arrangement model (tree distribution) and the spacing between specimens consistent with the purpose for which the forest was planted?
3.1.3	In the case of ICLF, ILF or ICF integration, are the trees planted respecting the spatial characteristics of the area while preserving the purpose of planting?

3.2	Mitigation of GHG Emissions
3.2.1	In the case of ICLF, ICF or ILF systems, is the calculation of carbon uptake by trees assessed?
3.2.2	Is the percentage of the forestry component sufficient to balance the farm's GHG emissions?
3.3	Own generation
3.3.1	For ICLF, ICF or ILF systems, check whether the property uses the biomass from the tree component in a sustainable way;

4.0	PROPERTY
4.1	Energy Consumption
4.1.1	Does the producer control the electric power consumption (kW/h)?
4.1.2	Does the producer make sustainable use of biomass as an energy source?
4.1.3	Does the consumption of fossil fuels in the agricultural production of the property remain on average compared to the previous period?
4.2	Own generation, utilization, reuse and autonomy
4.2.1	Power generation or electricity from solar, wind, hydro or biogas?
4.2.2	Is there thermal exploitation to avoid energy consumption?
4.2.3	Does the property make use of organic fertilizer?
4.2.4	Does the property make use of any sustainable technique for nitrogen uptake in the soil?
4.2.5	Does the property perform biological control / ecological management of pests and diseases?
4.3	Soil Quality
4.3.1	Does the producer take measures to prevent the loss of soil organic matter?
4.3.2	Does the producer take measures to avoid soil compaction?
4.3.3	Does the producer take measures to prevent soil erosion?
4.3.4	Has the producer made or makes soil measurements to assess the levels of carbon, organic matter and nutrients?

4.3.5	Does the producer monitor the carbon levels, organic matter and soil nutrients over time?
4.3.6	Does the producer take measures to prevent nutrient leaching from the soil?
4.4	Water Quality
4.4.1	Does the property hold a water usage permit?
4.4.2	Does the producer monitor the quality of water for human use?
4.4.3	Does the producer take measures to ensure the quality of surface water and groundwater and consequently the preservation of sources?
4.5	Biodiversity Conservation
4.5.1	Does the producer have a catalogue or knowledge of native species predominant in his/her property of both flora and fauna?
4.5.2	Is the area of native vegetation preserved?
4.5.3	Does the producer analyse (sample) the soil fauna in the farming and pasture areas?
4.5.4	Are there wildlife corridors connecting areas of native vegetation and are these preserved?
4.6	Restoration and Environmental Commitment
4.6.1	Does the producer adopt measures to prevent the degradation of marginal ecosystems within the productive context of the property?
4.6.2	Does the producer comply with the current laws regarding the percentage(%) of the property destined to the Legal Reserve Area - ARL, according to the location of the rural property?
4.6.3	If there is a Area of Permanent Preservation - APP, does the producer monitor and take measures to guarantee its role of preserving water resources, the landscape, geological stability and biodiversity, assisting the gene flow of fauna and flora, protecting the soil and ensuring human well-being?
4.6.4	Does the producer do economic exploitation in the Legal Reserve? If so, check that it complies with current law.
4.6.5	Does the producer adopt measures to mitigate the emission of GHGs from livestock?
4.6.6	Does the property conserve and preserve natural resources?
4.6.7	Does the property hold a Rural Environmental Registry - Cadastro ENVIRONMENTAL Rural - CAR?
4.6.8	Is the calculation of GHGs issued by the herd done?

4.7	Product Quality
4.7.1	Does the producer act to reduce chemical residues and biological pollutants in his/her products?
4.7.2	Does the producer perform any procedures to attest the quality of the product and verify the presence of chemical residues, biological pollutants within the limits recommended by the control agencies?
4.7.3	If applicable, does the producer perform product classification or analysis procedures according to official MAPA guidance?
4.7.4	Does the producer monitor customer perception? And the end user?
4.7.5	Does the producer provide or demand from the buyers any traceability mechanism for the products coming from his property?
4.8	Training and Qualification
4.8.1	Does the producer promote employee qualification?
4.8.2	Is the farm management trained in ICLF?
4.8.3	Do employees have basic concepts of hygiene and safety?
4.8.4	Regarding temporary, permanent, outsourced and family work on the property, do the employees have the necessary qualifications?
4.9	Employment Offer
4.9.1	Does the producer give preference to hiring local workers?
4.9.2	Is the percentage of permanent workers predominant compared to outsourced and temporary workers?
4.10	Employment Quality
4.10.1	Are vulnerable groups such as temporary workers, migrants, indigenous people and women treated equally compared to permanent workers?
4.10.2	Does the producer prevent child labour?
4.10.3	Are permanent workers registered?
4.10.4	Is the social security contribution up to date?
4.10.5	Does the Employer respect the working hours established by law?
4.10.6	Do employees' personal documents, such as their work permit, remain under their care?

4.10.7	Do workers receive any kind of benefit or variable income?
4.11	Capital Share
4.11.1	Are there measures for data sharing and/or cooperative organization to sell products and purchase supplies?
4.11.2	Is there an extension project with the purpose of adding value to the property and products?
4.11.3	Does the producer use the promotion of ICLF integration technology through its networks (contacts, cooperatives, associations, social networks, etc.) as a way to distinguish its products and property?
4.12	Environmental and Personal Health
4.12.1	Does the property act to reduce outbreaks of endemic disease vectors?
4.12.2	Does the property take measures to reduce air pollutants?
4.12.3	Does the property take measures to reduce the possibility of contamination of surface water and groundwater with hydro pollutants?
4.12.4	Does the property take measures to reduce the possibility of soil contamination?
4.12.5	Does the property encourage the practice of sports or does it provide a leisure, reading or resting area for the employees?
4.13	Occupational Health and Safety
4.13.1	Does the property have a work safety professional available?
4.13.2	Do workers (permanent, temporary and third parties) exposed to hazards and unhealthy factors receive appropriate IPO for the activity?
4.13.3	Are workers trained and instructed in the use and importance of IPO?
4.13.4	Does the property manage IPO and CPO through the IPO sheet?
4.14	Management Profile
4.14.1	Does the person in charge of the property hold any training aimed at the activity?
4.14.2	Does the person in charge devote most of his daily journey to property-oriented business?
4.14.3	Does the property make use of any system or accounting support?
4.14.4	Does the property structure its planning using some formal template?

4.14.5	Does the property or products hold any certification/labelling system?
4.15	Marketing Condition
4.15.1	Does the property research the market and have the possibility to choose the best method or channel to sell its products?
4.15.2	Is there any process of Adding Value to the products of the property?
4.15.3	Has the property acquired local storage capacity or expanded its capacity?
4.15.4	Does the property have its own transportation?
4.15.5	Does the property have its own brand for its products and does it advertise?
4.15.6	Does the property cooperate with other local producers?
4.16	Waste Disposal
4.16.1	Does the property properly dispose of household waste?
4.16.2	Does the property separate household waste?
4.16.3	Does the property properly dispose of production waste?
4.16.4	Does the property have any composting process on the waste produced by the farm?
4.17	Chemical Supplies Management
4.17.1	Does the property have a suitable place to store chemical supplies?
4.17.2	Does the property have a preventive maintenance plan for the equipment for the application of chemical supplies?
4.17.3	Does the property properly dispose of containers and packages of chemical supplies, according to the official guidance of the control agencies?
4.17.4	Does the property fulfil its role in the process of disposal of waste subject to reverse logistics?
4.18	Institutional Relations
4.18.1	Does the property have assistance or technical advice?
4.18.2	Is the property tied to any association or cooperative?
4.18.3	Has ICLF technology brought improvements in social impact to direct and indirect employees and the society in which it operates?

5.0	INTEGRATION
5.1	ICLF Synergy
5.1.1	Has integration increased production capacity within a single area?
5.1.2	Is the percentage (%) of the productive area used for ICLF satisfactory?
5.1.3	Is the forestry component conducted in such a way as to guarantee synergy with the others (livestock and/or CROP)?
5.1.4	Does the producer adopt measures to maintain/improve the physical-chemical-biological characteristics of the soils in order to avoid the degradations according to the agricultural activity?
5.1.5	Is the animal capacity of the system being used at its maximum efficiency?
5.1.6	Are the animals' length of stay on the property monitored so that it doesn't exceed 30 months?
5.2	Income Generation and Diversification
5.2.1	Given the productive diversification of the property and the seasonal distribution of the different products , is it possible to guarantee income security for the property?
5.2.2	Is the income security acquired with integration enough to maintain the stability of property and employment?
5.2.3	Has integration diversified the producer's sources of income?
5.3	Property Value
5.3.1	Has the property received investment in improvements?
5.3.2	Did the products and services generated from the integration positively influence the final price components and add value?
5.4	Food Production Safety
5.4.1	Does the integration offer the producer greater predictability and assurance of production?
5.4.2	Has there been an increase in production on the property?
5.4.3	Is there any concern about a succession program to secure property-related businesses?