



# Whitepaper

## Decentralized regenerative agriculture certification system

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[sintrop.com](http://sintrop.com)

## Abstract

This document presents the Decentralized Regenerative Agriculture Certification System, a network of people with the ambition to make agriculture sustainable in the world connected by blockchain technology. The objective is to create an incentive ecosystem for the agroecological transition through the creation of the Regenerative Agriculture Credit Token. Issued on the Ethereum blockchain, the token has a smart contract distribution model, where tokens will be distributed in the coming decades to producers and the community. Run by a sustainability proof algorithm, producers are the 'miners' of the system and will receive rewards according to the score obtained in the certification process. The evaluation method is based on the Sustainability in Agriculture Index (ISA) and on a decentralized inspection process. The System will evaluate rural producers based on four factors: the equivalent carbon balance, the impact on biodiversity, soil regeneration and water. The result of the evaluations is measured on a scale and the System returns the sustainability score assigned to each inspected producer, with a positive score meaning a producer that sequesters carbon and improves biodiversity, while a negative score means a producer that emits carbon and destroys the life of the Planet. People and companies will be able to buy credits from approved producers and generate a certificate of contribution. The evaluated producers will receive a seal that proves their participation and will be able to disclose the result obtained to their clients. All data is public and stored in a decentralized and transparent way on the blockchain.

Industrial monoculture has several negative environmental impacts. This practice makes the place worse over time than before, extracting resources from the soil that contribute to erosion, contaminating the area with pesticides and other chemicals, killing biodiversity and using more and more natural resources like water. As humanity, we need to make agribusiness sustainable so as not to put future generations at risk. We need to make degenerative agribusiness regenerative. A small group of agroecological producers, still undervalued, put the environment first, producing food and other resources in harmony with nature. Today we see the development of sustainable agricultural techniques, such as agroforestry and syntropic agriculture, techniques that follow the laws of nature and adapt its principles to food production, working together with biodiversity, making the soil increasingly richer and using fewer resources over time. There is already knowledge and technology to produce food sustainably, what is lacking is incentive. If our society's pattern of global food production is syntropic and not entropic, it will be possible to solve humanity's biggest problems such as global warming, recovery of biodiversity, water scarcity and food insecurity.

The aim of the project is to develop an agroecological, decentralized, reliable, open source incentive system using blockchain technology and with a sustainability proof mechanism to reward sustainable producers. The maximization of profits at any cost often means that the choice is the financial return, regardless of the environment. If, somehow, regenerative agriculture becomes equal or even more profitable than unsustainable agriculture, it will no longer make sense to produce food harming the planet. Our mission is to make agriculture sustainable in the world and this whitepaper describes the functioning mechanism of the Sintrop System and the Regenerative Credit token.

## Abstract

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## Apêndice A - Exemplo do Índice de Sustentabilidade na Agricultura

## 1. Mission

Our mission is to make agriculture sustainable in the world and regenerate the Planet. We want to contribute to making the world a better place. A planet with more biodiversity, more forests, less carbon emissions, less global warming, more life in the soil and with the cyclical use of natural resources. Our fight is to protect, regenerate and care for nature.

## 2. Vision

Where are we going with planet earth? See in the figures below the comparison of part of the territory of South America in 1985 and 2020:



Google Timelapse 1985 vs 2020

The process of deforestation and desertification of the territory and soil degradation is visible and frightening. What will the next photo in this sequence look like, in 2050, if we keep up the pace of destruction? How much biodiversity will be lost? How much CO<sub>2</sub> will be emitted into the atmosphere? And going a little further, imagine now how it will be in 2500? Will there be life on earth if we continue at this pace?

Industrial monoculture has several negative impacts on the environment. Much of the deforested areas in recent decades were burned to become pasture or extensive crops such as soy, corn and other commodities. The widely used pesticides, herbicides and chemicals degrade and contaminate the soil, harm the microorganism community, contaminate water, rivers and groundwater, in addition to several other impacts. Biodiversity, one of the planet's most precious assets, is fundamental to its existence. We need to protect the planet's biodiversity, not destroy it. Chemical pesticides are poisons applied with the intention of killing and destroying all local biodiversity other than the crop produced.

A living soil has organic matter and an ecosystem within itself, with numerous organisms and micro-organisms inhabiting the place. It usually has a darker color and high fertility for agriculture. Erosion is a gradual process in which soil life, existing ecosystems and fertility for agriculture are lost. Industrial monoculture contributes significantly to soil erosion and desertification, as it extracts resources, kills biodiversity and creates a negative energy balance in the system. The solution is not the industry that produces genetically modified seeds to survive the application of its chemical products. It makes rural producers hostage to this system, takes a large part of the profit that should belong to farmers and takes poisoned food to the consumer's table. The solution is to use nature's ancient

wisdom to our advantage. We need to change direction before it's too late. We need to stop deforestation and burning nature. We need to reforest the world.

An amazing farming technique that generates a positive energy balance, including a positive carbon balance, is syntropic farming, popularized by Ernst Götsch. Entropy is a measure of the degree of disorder in a system, the loss of energy that generates a negative energy balance. While syntropy is a measure of the order of a system, energy gain through processes. Syntropic agriculture is an agriculture that contributes to improving the energy of a system: It makes the soil more fertile, brings more and more life and biodiversity, uses fewer resources, etc. A rural property that consumes soil resources, uses extensive amounts of water and other natural resources, contributes to making the place worse over time, generating a negative energy balance and impoverishing the area. A rural property that generates life, makes the soil more fertile, uses less resources over time and brings biodiversity to the region, contributes to making the system better than before, with a positive energy balance. There is an urgent need to spread a production system that, while producing tons of delicious products and food, regenerates degraded areas and brings back our forests [3].

Our vision is a future in which world agriculture contributes to increasing biodiversity and reversing global warming. If at some point in the future the rate of regeneration and reforestation passes the rate of degradation and deforestation, we will reach a tipping point where the planet will regenerate. And the result will be the reversal of global warming and the mass extinction of biodiversity. tores e leva um alimento envenenado para a mesa do consumidor. A solução é usar a sabedoria ancestral da natureza a nosso favor. Precisamos mudar a direção antes que seja tarde demais. Precisamos deixar de desmatar e queimar a natureza. Precisamos reflorestar o mundo.

Uma incrível técnica agrícola que gera um saldo energético positivo, incluindo um saldo positivo de carbono é a agricultura sintrópica, popularizada por Ernst Götsch. Entropia é a medida do grau de desordem de um sistema, a perda de energia que gera um saldo energético negativo. Enquanto sintropia é a medida da ordem de um sistema, ganho energético através de processos. A agricultura sintrópica é uma agricultura que contribui para melhorar a energia de um sistema: Deixa o solo mais fértil, traz cada vez mais vida e biodiversidade, usa menos recursos etc. Uma propriedade rural que consome recursos do solo, usa extensivas quantidades de água e outros recursos naturais, contribui para deixar o local pior com o tempo, gerando um saldo energético negativo e empobrecendo a área. Já uma propriedade rural que gera vida, torna o solo mais fértil, usa menos recursos com o tempo e traz biodiversidade para a região, contribui para deixar o sistema melhor que antes, com um saldo energético positivo. É urgente a necessidade de espalharmos um sistema de produção que, ao mesmo tempo que produz toneladas de produtos e alimentos deliciosos, regenera áreas degradadas e traz de volta nossas florestas [3].

Nossa visão é um futuro em que a agricultura mundial contribui para o aumento da biodiversidade e reversão do aquecimento global. Se em algum momento futuro a taxa de regeneração e reflorestamento passar a taxa de degradação e desmatamento, atingiremos um ponto de mudança onde o planeta irá se regenerar. E o resultado será o processo de reversão do aquecimento global e da extinção em massa da biodiversidade.

### 3. Agroecological transition

Nossa solução envolve a criação de um Sistema de incentivo para a transição agroecológica. Con-

vidamos os produtores de alimentos a participarem da Rede de transição e caminhar ao longo das próximas décadas rumo a melhorar cada vez mais a sustentabilidade da sua produção. Os produtores que já trabalham de forma regenerativa possuem a oportunidade de serem recompensados com o token do Sistema pelo trabalho de sequestro de carbono e fomento da biodiversidade prestados para a sociedade.

Convidamos também todos os produtores não ecológicos a fazer parte dessa mudança, especialmente os de monoculturas como a soja, milho, outras commodities e pecuaristas. Os produtores deverão estudar o Índice de Sustentabilidade na Agricultura e buscar mudar sua produção rumo à agroecologia. O objetivo é que um produtor não sustentável, como por exemplo um monocultor de soja, entre degradando o solo e passe a recuperá-lo. Entre consumindo energia não renovável e passe a consumir energia limpa. Entre ainda em um sistema de monocultura e passe a plantar árvores. Entre comprando fertilizante químico e passe a produzir o próprio biofertilizante e assim por diante, em um círculo virtuoso.

## 4. The community



The foundation of the community are the Producers and Activists. In addition to them, the community involves other groups of users: Investors, Researchers, Validators and the Sintrop team of Developers and Advisors.

With the exception of investors who are free to register, users will only be able to register in the System after receiving an invitation to participate. Sintrop will be responsible for inviting the initial members of the community. And then, the most active Producers and Activists will be able to invite other people who want to fight for the same mission to participate in the System.

### Activists invitation rules:

- 1 - Only Activists with above average amount of Inspections will be able to carry out invitations.
- 2 - Only 1 invitation every 2 Eras per user.
- 3 - Considering the ideal ratio of five Producers for each Activist, invitations will only be allowed when the number of registered Producers is five times greater than the number of Activists.
- 4 - Must have performed at least 3 Inspections.
- 5 - Must have less than 3 dropouts

## Producers invitation rules:

- 1 - Only for producers with a positive sustainability score.
- 2 - Minimum of 3 Inspections received.
- 3 - Above average sustainability score.
- 4 - One invitation every 2 Ages.

## 5. Sustainable Agriculture Index

One of the System's solutions is the creation of the ISA, or Agriculture Sustainability Index, which is a set of System evaluation rules. The level of ecological impact of each producer will be measured on a scale through the Sustainability Score. A positive score means a producer that, in the sum of the evaluated factors, generates a positive impact on the planet, sequesters carbon and promotes biodiversity. A negative score means a negative impact on nature, emitting carbon and destroying biodiversity.

We will assess the impact of food production on the planet by analyzing several factors based on sustainability pillars and factors.



### Pillars:

- 1 - Carbon footprint
- 2 - Biodiversity
- 3 - Soil
- 4 - Water

### Sustainability factors:

- 1 - Animal biodiversity
- 2 - Plant biodiversity
- 3 - Electricity
- 4 - Sewage and effluentes

- 5 - Fertilizers**
- 6 - Defensives**
- 7 - Packaging**
- 8 - Fossil fuels**
- 9 - Deforestation**
- 10 - Desmatamento**
- 11 - Native reserve**

The result will be the category of regenerative food producers, which in the sum of the involved production factors contribute positively to the planet. It will be the function of researchers to design and develop the Index.

## 6. The time

The System's units of time are Eras and Epochs. Each Age is intended to be approximately one month in length, and one Epoch equals 72 Ages, approximately 6 years. According to Etherscan, the Ethereum blockchain adds a new block to the network every 13.5s and this will be the basis for calculations involving time.

Blocktime (s)	13,50
Blocks per hour	267
Blocks per day	6.400
Blocks per ERA	192.000
Eras per Epoch	72
Blocks per Epoch 2	13.824.000
Blocks per Epoch 3	27.648.000
Blocks per Epoch 4	41.472.000
Blocks per Epoch 5	55.296.000
Blocks per Epoch 6	69.120.000

## 7. Inspections

The Activists are the users responsible for carrying out the Inspections and assessing the level of sustainability of the producers.

They will be able to accept the Inspections they want to do and then go to the property to carry out the Inspection. The Inspection system will be decentralized, with Inspections carried out by the Activists so that the same person cannot evaluate the same producer more than once.

For the Inspection to be valid, a proofPhoto must be sent to the System, or a photo of proof that the Activist visited and inspected the production. For this, when registering in the System, both users must send a proof photo. And in the Inspection, a photo must be sent containing both people at the production site and the result obtained. After accepting an inspection, the Activist will have  $\frac{1}{4}$  Era to perform the inspection and send the data to the blockchain. If you do not do it, you will be penalized with one withdrawal and when you add three withdrawals you will no longer be able to participate.



## 8. Certification rules

- 1** - Each producer can only request one Inspection at a time.
- 2** - A producer who has already been inspected can only request a new Inspection 2 Eras after the conclusion of the previous Inspection.
- 3** - One activist can not accept an Inspection of a Producer that he has previously inspected.
- 4** - Once the Inspection is accepted, the Activist will have  $\frac{1}{4}$  of Era to carry out the Inspection and send the data to the System.
- 5** - An inspection can only be accepted  $\frac{1}{4}$  Era after requesting it.
- 6** - The Activist who accepts an Inspection and does not carry it out will be penalized with a withdrawal.
- 7** - Inspections without proofPhoto will be considered invalid.  
Inspeções sem cálculos serão consideradas inválidas.
- 8** - Inspections without calculations will be considered invalid.
- 9** - Totally sustainable = +10 isaPoints.
- 10** - Partially sustainable = +5 isaPoints.
- 11** - Neutral = 0 isaPoints.
- 12** - Partially not sustainable = -5 isaPoints.
- 13** - Totally not sustainable = -10 isaPoints.

## 9. The Stamp

All System data is public and stored in a decentralized way on the Ethereum blockchain. So the stamp is the simple reading of the data on the blockchain. The producer will be able to download his certificate as a pdf, image and disclose the result obtained to his public.



## 10. Token “Regenerative Agriculture Credit”

The system introduces the utility type token Regenerative Agriculture Credit, which will be distributed algorithmically as a reward and incentive for agroecological transition. It is scheduled to be issued over the next few decades and distributed according to the sustainability score obtained by producers in inspections.

Companies and people interested in investing and encouraging this market will be able to acquire tokens from Producers and the community and exchange them in the Sintrop System for the Certificate of Contribution to the agroecological transition, which attests to their contribution to sustainable agriculture with the impact generated in terms of CO2 equivalent and biodiversity.





0x0dd731f6f0f786c6fafe20f6168c4852824a44d2

Você contribuiu para a transição agroecológica com um total de:

**121000 SAC Tokens**

A terra agradece sua contribuição.  
Juntos, tornaremos a agricultura sustentável!

Meu impacto:

- 0 TONS de CO2 capturado
- 0 TONS de CO2 impedida
- 0 aumento da biodiversidade

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**Hash da Transação**  
[0x1fcf6a592393b6daf1c4dc011d658a894d67b13fcad256d8eeb7...](#)

**Para o Endereço**  
0x3b25db3d9853ef80f60079ab38e5739cd1543b34

**Número do Bloco**  
8451853

**Data**  
07-02-2023 - 15:38

**Total Queimado**  
10000.00000

**Hash da Transação**  
[0xf45e73b43fa657bf8cc1326ff3d14d6a53acf6fd7b311cf3071fa63...](#)

**Para o Endereço**  
0x3b25db3d9853ef80f60079ab38e5739cd1543b34

**Número do Bloco**  
8457787

**Data**  
08-02-2023 - 15:58

**Total Queimado**  
10000.00000

## 11. Token distribution model

The System will algorithmically distribute, through smart contracts, tokens to user groups in accordance with the set of rules described below. The unit of time is Eras and Epochs, where each era is equivalent to approximately 1 month, and each epoch is equivalent to 72 Eras, approximately 6 years. So approximately 95% of the tokens will be distributed over the next 40 years. Each Era, approved users will earn the right to withdraw tokens from smart contracts for their contribution to the community. Each Season, the reward per distributed Era is halved through the halving mechanism.

For the producer to be approved by the system and be able to receive the token, he will have to be approved by the following criteria:

- 1 - Sustainability score > 0**
- 2 - Minimum of 3 inspections received, by 3 different activists**
- 3 - Maximum 12 eras without receiving inspections**
- 4 - Maximum ISA score of 1000**

50.00% of tokens distributed to approved sustainable producers according to their sustainability score.

ProducerPool	
Total reward tokens	750.000.000
Period	Epoch 1
Reward per era	5.000.000
Total period reward	360.000.000
% of total	48,00%
Period	Epoch 2
Reward per era	2.500.000
Total period reward	180.000.000
% of total	24,00%
Period	Epoch 3
Reward per era	1.250.000
Total period reward	90.000.000
% of total	12,00%
Period	Epoch 4
Reward per era	625.000
Total period reward	45.000.000
% of total	6,00%
Period	Epoch 5
Reward per era	312.500
Total period reward	25.500.000
% of total	3,00%
Period	Epoch 6
Reward per era	156.250
Total period reward	11.250.000
% of total	1,50%
Period	Epoch 7
Reward per era	78.125
Total period reward	5.625.000
% of total	0,75%
Period	Epoch 8
Reward per era	39.063
Total period reward	2.812.500
% of total	0,375%

For the activist to be approved by the system and be able to receive the rewards, he will have to be approved by the following criteria:

- 1 - Minimum of 3 inspections performed**
- 2 - Maximum 3 eras without performing inspections**
- 3 - Maximum of 5 penalties per withdrawal**

The activist who passes these criteria will be approved by the system and will be able to receive the rewards. The reward, in turn, will be distributed in a weighted manner according to the number of inspections carried out by each activist.

12.00% of the tokens distributed to remuneration activists for service provided to the audit community of rural producers.

ActivistiPool							
Total reward tokens		180.000.000					
Period	Epoch 1	Epoch 2	Epoch 3	Epoch 4	Epoch 5	Epoch 6	
Reward per era	1.200.000	600.000	300.000	150.000	75.000	37.500	...
Total period reward	86.400.000	43.200.000	21.600.000	10.800.000	5.400.000	2.700.000	...
% of total	48,00%	24,00%	12,00%	6,00%	3,00%	1,50%	...

2.00% of the tokens distributed to agroecological researchers in compensation for services rendered in research and development of the Sustainability Index in Agriculture. The reward for approved researchers will be made equally among all, with the aim of not stimulating competition but cooperation between them.

ResearcherPool							
Total reward tokens		30.000.000					
Period	Epoch 1	Epoch 2	Epoch 3	Epoch 4	Epoch 5	Epoch 6	
Reward per era	200.000	100.000	50.000	25.000	12.500	6.250	...
Total period reward	14.400.000	7.200.000	3.600.000	1.800.000	900.000	450.000	...
% of total	48,00%	24,00%	12,00%	6,00%	3,00%	1,50%	...

4.50% of tokens distributed to developers and team members as compensation for system development services provided. The distribution to the developers will be done through two different contracts, one as a reward for the pre-launch development of the system on the mainnet and the other after the start of the operation.

1.00% of the distributed tokens for a period of 18 eras from the moment the contract was deployed on the Ethereum mainnet. The distribution will be weighted according to the level of each developer.

DevelopersPool	
Total reward tokens	15.000.000
Period	18 eras
Reward per era	833.333

3.50% of distributed tokens.

DevelopersPool 2.0						
Total reward tokens		52.500.000				
Period	Epoch 1	Epoch 2	Epoch 3	Epoch 4	Epoch 5	Epoch 6
Reward per era	350.000	175.000	87.500	43.750	21.875	10.938
Total period reward	25.200.000	12.600.000	6.300.000	3.150.000	1.575.000	787.500
% of total	48,00%	24,00%	12,00%	6,00%	3,00%	1,50%

2.00% of the tokens distributed to project validators as remuneration for system review and maintenance services provided. The distribution will be equal among all.

ValidatorsPool						
Total reward tokens		30.000.000				
Period	Epoch 1	Epoch 2	Epoch 3	Epoch 4	Epoch 5	Epoch 6
Reward per era	200.000	100.000	50.000	25.000	12.500	6.250
Total period reward	14.400.000	7.200.000	3.600.000	1.800.000	900.000	450.000
% of total	48,00%	24,00%	12,00%	6,00%	3,00%	1,50%

0.50% of tokens distributed to project advisors over 120 eras.

AdvisorsPool	
Total reward tokens	7.500.000
Period	120 eras
Reward per era	62.500

## 12. Proof of sustainability

The reward to producers will be distributed weighted according to the sustainability score, isa score, of each certified producer.

Being,

$r$  = reward per era

$ISA(p)$  = producer p ISA score

$ISA(t)$  = sum of all approved producers ISA score

The reward in a given era that must be approved to a producer p will be:

$$r(p) = ( ISA(p) / ISA(t) ) * r$$

As a result, the higher the sustainability score, the more tokens the producer will be entitled to receive and he will be able to optimize his earnings by requesting more inspections and improving the sustainability of his production.

The reward for activists will be distributed in a weighted manner according to the number of inspections carried out by each one, discounted by the number of withdrawals.

Being,

d = activist dropouts

i = number of inspections carried out by the activist

r = reward per era

q = number of total inspections performed on the system

The reward in a given era of an activist (a) will be:

$$r(a) = [ ( i - 3*d ) / q ] * r$$

d = desistências do ativista

i = quantidade de inspeções realizadas pelo ativista

r = reward per era

q = quantidade de inspeções totais realizadas no sistema

A recompensa em determinada era de um ativista a, será:

$$r(a) = [ ( i - 3*d ) / q ] * r$$

## 13. The technology

The system uses blockchain technology to store data and execute smart contracts and is being developed on the Ethereum platform. The software is open source and, with the exception of the network cost of Ethereum, free for everyone to use.

Since the publication of Satoshi Nakamoto in 2008 [4], blockchain technology has been introduced to the world. This technology emerged with the aim of decentralizing “conventional” organizations. One of the main characteristics of this technology is the data storage structure in blocks, where a block carries the hash of the previous block in order to connect them algorithmically. Another important characteristic is the distributed data structure, in which instead of storing data centrally on a server with private access, the data is stored in the participants, called network nodes, where each participating computer stores a copy of the record. of the transactions carried out.

Contributing to decentralization, Buterin, Gavin Wood and the Ethereum foundation [5-6] launched a new blockchain with a different purpose than Bitcoin: To develop a decentralized, open-source computer infrastructure that runs programs or smart contracts automatically. The Ethereum platform allows developers to create powerful decentralized applications with built-in functions. Providing high availability, auditability, transparency and neutrality [7]. Our system is being developed on top of the Ethereum platform. Instead of registering system information and data in a centralized database with restricted access, we will store all transactions, including inspection results, ISA, activist and producer information, as well as votes and sustainability categories in the Ethereum blockchain. In an open way, transparent to everyone and distributed on several computers that are part of the network. And that's why we will use the blockchain, to allow the development of the application in a decentralized way. The technology of IPFS, or Inter Planetary File System as a storage system [8-9] is also being used to apply unique hashes to texts and images hashes únicos nos textos e imagens.

## 14. Security

The System will allow a user to make accusations if he encounters any practice contrary to the rules of the system. The objective is to encourage the community itself to carry out maintenance work for the System, so that the registered complaints can be investigated.

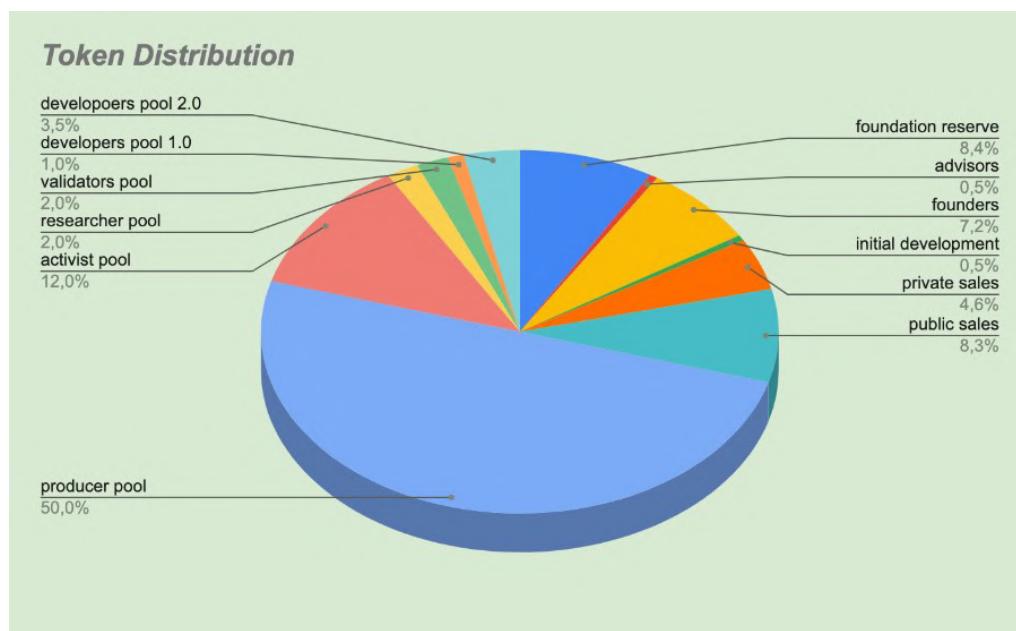
It will be the role of Validators to verify and maintain the System to exclude users and invalidate reported inspections. Each Validator can vote to invalidate an inspection, and when  $50\% + 1$  of the validators vote, the inspection will no longer be valid, removing the user from the distribution pools and no longer allowing interaction with the System.

## 15. Tokenomics

name	Regenerative Agriculture Credit Token
symbol	RAC
totalSupply	1.500.000.000

Distribution of tokens by user groups:

Distribution	%	Number of tokens
foundation reserve	8,40%	126.000.000
advisors	0,50%	7.500.000
founders	7,20%	108.000.000
initial development	0,50%	7.500.000
private sales	4,60%	69.000.000
public sales	8,30%	124.500.000
producer pool	50,00%	750.000.000
activist pool	12,00%	180.000.000
researcher pool	2,00%	30.000.000
validators pool	2,00%	30.000.000
developers pool 1.0	1,00%	15.000.000
developers pool 2.0	3,50%	52.500.000
<b>Total</b>	100%	1.500.000.000



Token sales	%	Number of tokens
Private sales 1	2,60%	39.000.000
Private sales 2	2,00%	30.000.000
ICO	8,60%	129.000.000

## 16. Token value

The value of the token lies in the positive impact of carbon sequestration and ecosystem regeneration generated by the System's producers. Each Producer will be assessed with an estimate of carbon equivalent sequestered per month and projection of biodiversity, soil and water in its ecosystem. And the sum of all Producers in the System will be the monthly network impact.

In the first Epoch, a total of 6,800,000 tokens per Era will be distributed to System users. Making projections of the network's carbon sequestration of 1000, 100,000 and 10,000,000 hectares, we arrive at the impact projection table below and the token vs kgCO2e ratio, m2 of regenerated soil, m3 of water and units of life. The greater the network of regenerative producers reforesting the world at the same time that food is produced, the greater this relationship will be.

SINTROP IMPACT PROJECTIONS					
	network area [ha]	1.000	100.000	10.000.000	600.000.000
Carbon	average sequestration [tCO2e/ha/yr]	40	30	25	20
	total sequestration (tCO2e/yr)	40.000	3.000.000	250.000.000	12.000.000.000
	sequestration per month (tCO2e/month)	3.333	250.000	20.833.333	1.000.000.000
Soil	average soil regeneration [%]	40%	45,00%	50%	55%
	regenerating soil [ha]	400	45.000	5.000.000	330.000.000
	regenerating soil [m2]	4.000.000	450.000.000	50.000.000.000	3.300.000.000.000
Water	average water regeneration [m3/ha/month]	10	10	10	10
	total water regeneration [m3]	10.000	1.000.000	100.000.000	6.000.000.000
Biodiversity	average biodiversity [LifeUnits/ha/month]	50	50	50	50
	total biodiversity [LifeUnits]	50.000	5.000.000	500.000.000	30.000.000.000
Impact per token	monthly token distribution	6.250.000	6.250.000	6.250.000	6.250.000
	carbon impact [kgCO2e/token]	0,53	40,00	3.333,33	160.000,00
	soil impact [m2/token]	0,64	72,00	8.000,00	528.000,00
	water impact [L/token]	1,6	160	16.000	960.000
	biodiversity impact [lifeUnits/token]	0,008	0,80	80	4.800

\*example values

## 17. Conclusion

People need to understand the impact that the food they buy has on the planet. Continuing to buy from a system that destroys nature means being part of it. The more people choose products with a positive environmental impact when buying food, the greater the speed of change. We need to reforest the world to reverse global warming and nurture Earth's health. A super smart way to regenerate the planet is to do it while producing food. The solution to our problems as a society and environmental problems is not the responsibility of governments or NGOs. The solution lies in the environmental responsibility of each individual and in the actions of people with the intention of leaving the world a better place. We need to act, we need to change the direction the world is going before it's too late.

***Either agriculture will save the Earth, or destroy it. Which side will you be on?***

## Referências

- [1] - ACS, “What are the greenhouse gas changes since the industrial revolution?”.
- [2] - Lorenz, “Carbon sequestration in soil”. <https://www.sciencedirect.com/science/article/abs/pii/S1877343515001013>, access 21.06.2021.
- [3] - Sakamoto, Rebello, “Agricultura sintrópica segundo Ernst Gotsch”.
- [4] - Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System”, 2008.
- [5] - Vitalik Buterin, “Ethereum Whitepaper”.
- [6] - Gavin Wood, “Ethereum: A Secure Decentralized Generalized Transaction Ledger”, 2014.
- [7] - Gavin Wood and Andreas M. Antonopoulos, “Mastering Ethereum”
- [8] - Protocol Labs, “Filecoin: A Decentralized Storage Network”, 2017.
- [9] - Juan Benet, “IPFS - Content Addressed, Versioned, P2P File System”.