SEEDSWAP

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Abstract

There are two trends in decentralized finance that have gained notable traction in recent years: proof-of-stake (PoS) consensus mechanisms and the issuance of Non-Fungible Tokens (NFT's). The first, PoS consensus, is beneficial in many respects. For one thing, it does not require the same level of computing power as proof-of-work consensus in order to operate, and as such, it is more energy efficient. Additionally, PoS consensus has been shown to foster many powerful incentives for liquidity providers (LP's), such as distributing transaction fees to LP's and rewarding them with additional currency.

The second, the issuance of NFT's, provides a promising new method of speculative investment that better suits the oncoming era of decentralized, tech-based finance. It is inevitable that as financial capital and technology become increasingly intertwined, and as more people across the world access capital markets for the first time through technology, digital assets such as NFT's will become a standard way of preserving, exchanging, and accumulating wealth.

PoS consensus and the issuance of NFT's each represent burgeoning and profound areas in the world of decentralized finance. But it is yet unclear how these two trends can be utilized synergistically. Thus, the question that SeedSwap seeks to answer is this: how can PoS consensus mechanisms and NFT's be made complementary? In this paper, we will lay out in detail the approach SeedSwap plans to take towards answering this question. This approach, in a word, involves implementing specific rules for staking that will promote liquidity providers to stake for as long as possible in order to later redeem their rewards for Non-Fungible Tokens.

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The Farming System

By increasing farming rewards with compounding multipliers, SeedSwap makes providing liquidity a more fruitful practice. Modeled after the annual cycles of agriculture, this system is called "farming" and liquidity providers are called "farmers". The farming system applies a different multiplier to a farmer's Annual Percentage Yield each fiscal quarter or "season". Below is a formal explanation of the farming system, its rules, and the multiplier. The bottom-line can be found at the end of this section. Let us begin with the rules. **Rule 1: Each season has its own base multiplier, which is applied for the entirety of that season no matter what.**

$$BaseMult_{Q1} = 1.01$$
$$BaseMult_{Q2} = 1.02$$
$$BaseMult_{Q3} = 1.03$$
$$BaseMult_{Q4} = 1.05$$

Base multiplier values do not change, and *at least* one base multiplier will be applied to a farmer's APY calculation in any season. Base multipliers are compounded by the second rule. **Rule 2: Base multipliers are compounded together when a farmer chains consecutive seasons of staking without withdrawing any of their liquidity from the liquidity pool.** Let us look at how this compound multiplier would work for one year. Starting in the first season of the first year <Q1,Y1>, and finishing in the fourth season of the second year <Q4,Y1>, this farmer's APY compound multiplier would progress thus:

$$CompoundMult_{<Q1,Y1>} = (1.01) = 1.01$$
$$CompoundMult_{<Q2,Y1>} = (1.01)(1.02) = 1.0302$$
$$CompoundMult_{<Q3,Y1>} = (1.01)(1.02)(1.03) = 1.061106$$
$$CompoundMult_{<Q4,Y1>} = (1.01)(1.02)(1.03)(1.05) = 1.1141613$$

In the first season of this farmer's staking chain, <Q1, Y1>, this farmer's compound multiplier is equal to the base multiplier of that season. This is because there are, as of yet, no prior seasons staked the base multipliers of which would compound with the base multiplier of the current season. Put more simply, at least two seasons' base multipliers musy be activated for the compounding to begin.

In the second season of this farmer's staking chain, <Q2, Y1>, this farmer's compound multiplier actually begins. Here, the compound multiplier is equal to the product of the base multiplier from the previous season, Q1 = 1.01, and the base multiplier from the current season, Q2 = 1.02. As a result, for <Q2, Y1> we see that the formula for the compound multiplier contains only those two inputs.

Likewise, in the third and fourth seasons of this farmer's staking chain, <Q3, Y1> and <Q3, Y1>, this farmer's compound multiplier is equal to the product of the base multipliers of all previous seasons consecutively staked *and* the base multiplier of the current season. As a result, for <Q3, Y1>, we see that the the compound multiplier is equal to the product of the base multipliers of Q1, Q2, and Q3; and for <Q4, Y1>, the compound multiplier is equal to the product of the base multipliers of all four seasons. It is worth reiterating that the base multipliers compound in this manner only when a farmer stakes through consecutive seasons without withdrawing any liquidity.

If, on the other hand, a farmer withdraws liquidity from the liquidity pool, then the third rule is invoked. **Rule 3: When a farmer withdraws liquidity, the compound multiplier is reset, starting over with the base multiplier of the current season as its first value.** In the example above, imagine that the farmer, instead of keeping all of their liquidity in the liquidity pool, decides to withdraw some of their liquidity during the third season, <Q3, Y1>. Their compound multiplier would reset, starting with the base multiplier of Q3 = 1.03. As a result, their multiplier in this scenario would be, instead of the compound value for <Q3,Y1>, this:

$$BaseMult_{Q3} = 1.03$$

Generally speaking, this is true for any season. If a multiplier is not a compound multiplier then it is the base multipler of the current season. In this example, if the farmer does not withdraw any more liquidity, then their multiplier will be a compound multiplier in the following season, <Q4, Y1>.

$$CompoundMult_{<Q4,Y1>} = (1.03)(1.05) = 1.0815$$

Because the farmer withdrew liquidity in the third season <Q3, Y1>, rule three was invoked. Thus, taking the base multiplier of Q3 as its first value after resetting, the compound multiplier in the following season <Q4, Y1> only includes the base multipliers of Q3 and Q4. This is one way that the compound multiplier is reset, but it is not the only way. The other way that the compound multiplier is reset is through the fourth rule. **Rule 4: The compound multiplier resets at the beginning of each year.** Consequently, during the first season of any year <Q1, Yn>, the base multiplier and the compound multiplier are equivalent:

$$BaseMult_{Q1} = 1.01 \equiv CompoundMult_{<Q1,Yn>} = 1.01$$

As a corollary to this rule, in effect, there is no penalty on the multiplier for withdrawing liquidity during Q1. The fifth and final rule is simply this: **Rule 5: Depositing liquidity into the liquidity pool has no effect on the multiplier.**

Now, we seek only to provide information about these rules. We leave everything else to the farmers. One of the goals of this project is to foster a competitive and cooperative network, where farmers are encouraged and expected to do their own thinking. They should discuss their interpretations of the rules with other farmers and form individual philosophies *vis-à-vis* the farming system. Some questions that a farmer might ask while developing their farming strategy: what are the best seasons to start and end staking chains? How many of my seeds should I stake each season? Can price trends be predicted by abstraction of these rules alone? For convenience, we restate the five rules of the Farming System on the next page.

Rule 1: Each season has its own base multiplier, which is applied for the entirety of that season.

Rule 2: Base multipliers are compounded together when a farmer chains consecutive seasons of staking without withdrawing any of their liquidity from the liquidity pool.

Rule 3: When a farmer withdraws liquidity, the compound multiplier is reset, starting over with the base multiplier of the current season as its first value.

Rule 4: The compound multiplier resets at the beginning of each year.

Rule 5: Depositing liquidity into the liquidity pool has no effect on the multiplier.

Tokenomics

SeedSwap approaches Tokenomics with a balance of inflationary and deflationary pressures.
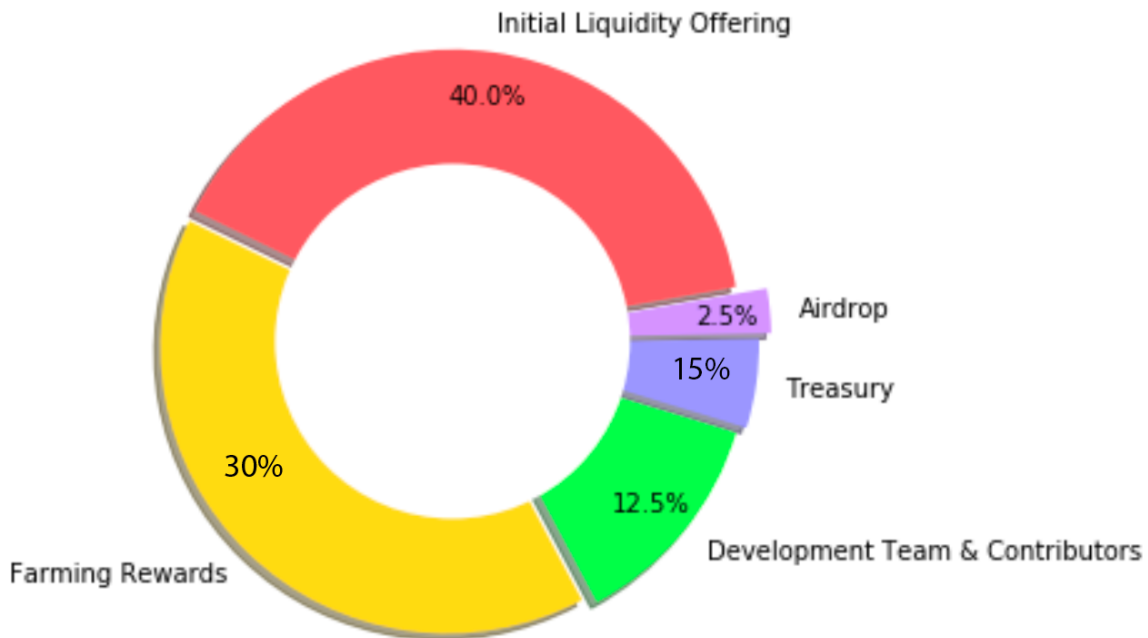
There will be a maximum supply of 100,000,000 seeds.

- 30,000,000 (30%) will be reserved as rewards for liquidity providers

- 40,000,000 (40%) will allocated to the Initial Liquidity Offering (ILO),

- 12,500,000 (12.5%) will be given to the development team and contributors,

- 15,000,000 (15%) will be stored in the treasury to fund future developments, and

- 2,500,000 (2.5%) will be airdropped.

Following the ILO, any of the 40,000,000 seeds that are not sold during the ILO will be burned and removed from circulation.

Following the launch of NFT's in Q3, 2021, in Q4, 2021, we will implement a seed buyback program using some of the revenues that will be generated from NFT exchange fees. The NFT exchange and exchange fees are described in the next section, Non-Fungible Tokens. With the seed buyback program, seeds will be purchased once each season and then burned and removed from circulation permanently. The magnitude of any given buyback will depend on the revenue generated from the NFT exchange and the number of remaining seeds in circulation.

The total time required for the complete distribution of farming rewards depends on many factors, including some unknowns, such as the percentage of all seeds that will be staked in the liquidity pool at any given time. Taking the presence of these unknowns into consideration, along with what we do know, we anticipate that the farming rewards will be completely distributed over a period of at least four years.

Non-Fungible Tokens

As was stated above in Tokenomics, the ILO will introduce up to 40-million seeds into circulation, but any seeds not sold in the ILO will be burned. This, in addition to the fact that both redeeming NFT's and the token buyback program will result in the burning of seeds, means that there will be strong deflationary pressures acting on the seed supply. To balance these pressures, and thus give perpetuity to the farming system and bolster the seed supply, the pool of farming rewards will be continually replenished by a portion of all seeds that are redeemed for NFT's.

As seeds are redeemed for NFT's, the pool of farming rewards will be replenished by a percentage of those seeds. The remainder of these seeds will either be burned and permanently removed from circulation or stored in the treasury in order to fund future development projects. The percentages are as follows:

• 55% of these seeds will be burned immediately,

• 35% will return as farming rewards, and

• 10% will be stored in the Treasury.

NFT's will be redeemable with seeds on the SeedSwap website. They will be designed as crypto- agricultural commodities, such as corn, tomatoes, wheat, and soybeans. NFT's will also be categorized by a rarity distribution, as either common, uncommon, rare, or ultra-rare. NFT's can be of the same kind but of different rarity. For example, there can be both common and ultra-rare corn NFT's. Likewise, they can be of the same rarity but of different kind. Rarer NFT's will require more seeds in order to be redeemed.

A seed owner will be able to redeem their seeds for one NFT of any rarity through the website once per month. Then, upon redeeming, a one-month timer will be applied to their individual wallet, which will prevent them from redeeming another NFT until the one-month time has completely elapsed. If, in the meantime, they would like to accumulate more NFT's or sell the NFT's

that they already have, NFT's will be tradeable from peer-to-peer on the SeedSwap exchange, which will also be on the website. There will be a small fee associated both with redeeming NFT's and with trading them on the exchange. These fees will be competitive with those of other NFT exchanges. The revenue from the fees will be utilized to fund the seed buyback, as well as other development areas, some of which are yet undisclosed.

A discount on the seed cost of redeeming an NFT will be given to committed farmers. The discount will be calculated from a number of variables, chiefly, the number of seeds that they are staking, and for how long those seeds have been staked. Additionally, based on these same variables, farmers will have a slight probability of harvesting an NFT without needing to redeem it with seeds. Both the discounts and the harvesting probabilities will be scalable to the rarity distribution. NFT's will be launched in Q3, 2021.

More details about NFT's and other future SeedSwap developments will be made available as they are established. In the meantime, we gladly welcome ideas and input from the community.

Thank you for reading, and welcome to SeedSwap!

SeedSwap Roadmap 2021

Quarter I

Team and Project Formation ILO

Quarter II

Farming System

Quarter III

Non-Fungible Tokens NFT Exchange

Quarter IV

Mobile App
Token Buyback Program

Disclaimer

Do not enter any investment without fully understanding the risks.

All investments, including SeedSwap, are uncertain by nature and carry inherent risk however slight. We encourage our investors to do their own research and invest with prudence. Furthermore, nothing in this document constitutes or is intended to constitute financial advice. For financial advice, we strongly encourage investors to consult with financial professionals. Lastly, we affirm that there is no such thing as a guaranteed future outcome in investing. Accordingly, we lay no claim or interest whatsoever in the notion that investing in SeedSwap will result in a guaranteed profit. We simply will do our best to deliver on a product that can be judged as investment-worthy.

This document is subject to change and revision. Some changes to this document may reflect changes or "patches" to the Farming System, Tokenomics, Non-Fungible Tokens, and/or the SeedSwap NFT Exchange. Such changes will be documented and shared publicly. It is the responsibility of the investor to review these changes whenever they are made available.