DEFI

HANDBOOK

Introduction to Decentralized Finance

Free eBook

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Part 1

Understanding DeFi

Centralized vs. Decentralized Finance

Decentralized Finance (DeFi)
refers to all financial services that run on a decentralized blockchain.

Centralized Finance	Decentralized Finance
Centralized Finance relies on institutions such as banks, stock exchanges and insurances, which act as intermediaries, and courts, to provide arbitration. FinTech digitizes this traditional financial world.	DeFi services run on a decentralized blockchain. The self-executed code of the blockchain replaces the need for trust. All participants follow the "rules of the game" of the blockchain protocol. Thus, there is no more need for any intermediaries or trusted third parties. Financial applications are no longer subject to the control of a central player.
A bank account is required to participate in the traditional financial system. However, billions of people worldwide are thereby excluded.	DeFi opens the door to the financial market for everyone. The only requirement is an Internet-enabled device and a crypto wallet, such as Maiar, on which cryptocurrencies can be bought, stored, and transferred.
The availability of services depends on the opening hours of banks and exchanges. The execution of transactions may take several business days.	A DeFi dApp runs independently of banks and is available around the clock. Transactions happen within seconds. Users maintain the full control over their funds at all times.
Trust accounts are usually managed by banks, and the services are associated with high fees.	The contract partners release transactions themselves when the agreed conditions (unchangeably encoded in a smart contract) are met. The fees are minimal.

Smart contracts

You can think of a Smart Contract as a digitized contract whose terms are written not on paper but directly in computer code.
Moreover, Smart Contracts are applications – small pieces of code that automatically perform certain actions when the specified parameters are met (if this, then that).

They enable full (contractual) automation of processes related to payments or transactions. The rules and conditions summarized in a smart contract are stored on the blockchain, where any participant in the decentralized network can access the code and verify that what is happening there is legal.

Validation of transactions

To run a decentralized blockchain, users are needed who validate the transactions. They are responsible for deciding which transactions may be included in a block and which may not because they are either incorrect or incomplete.

In Bitcoin, this validation process takes place via the so-called PROOF OF WORK consensus mechanism. This means that a participant must perform a certain amount of work in order to qualify as a validator.

In the case of Bitcoin, this work is done by so-called Miners.

The miners provide work in the form of computing power, which costs them money for hardware and electricity. In doing so, they prove that they are serious about participating in the network.

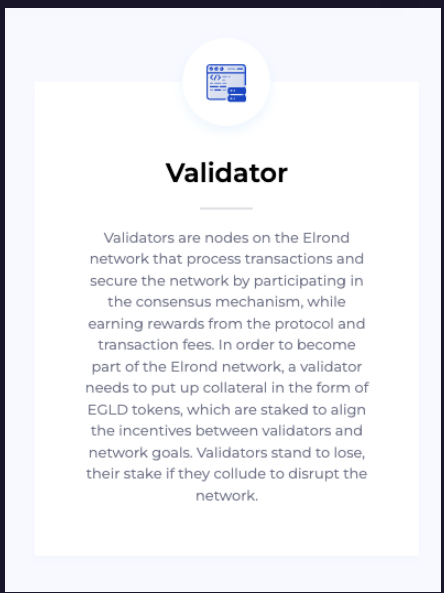
Validation of transactions

Secure proof of stake

Elrond has proposed a novel approach to consensus called "Secure Proof of Stake" which eliminates PoW computational waste, and combines eligibility through stake and rating with random validator selection, and an optimal dimension for the consensus group. The BFT-like consensus protocol maintains a high security level through random sampling of the consensus group, and random reshuffling of nodes into other shards. The consensus uses an unbiasable randomness source generated by the block proposer via signing the previous random source.

The Elrond blockchain works with a different consensus mechanism that consumes significantly less energy, the so-called PROOF OF STAKE.

Here, users qualify as block validators by depositing chapters, i.e. "locking away" a certain number of tokens via smart contract – by making a stake. This gives them the right to validate transactions for the blockchain, and in return, they receive rewards comparable to interest. The interest usually consists of the trading fees that are incurred by this cryptocurrency.



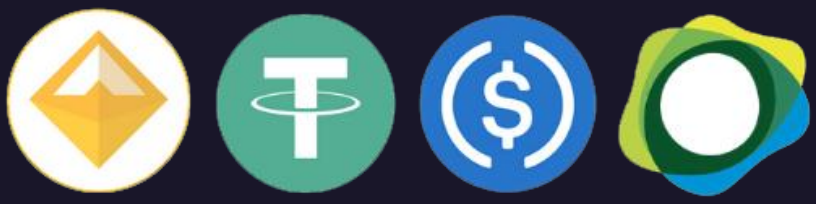
At Elrond, everyone has the opportunity to participate in staking

To become a Validator and run their own node, users need a larger amount of EGLD. However, as a "DELEGATOR", users can also deposit even smaller amounts of a specific cryptocurrency (e.g. EGLD) with a validator (such as Istari Vision) for a flexible period of time. In return, users receive rewards in the form of passive income. By staking, delegators secure the blockchain and make a valuable contribution to decentralization.

Stablecoins

In order to use DeFi tools, you need cryptocurrencies.
This means dealing with extreme price volatility.
To reduce this risk, developers created stablecoins.

Stablecoins are tokens whose value is linked to a fiat currency such as USD or other assets (Gold, Silver,…). Thus, they are the first step in placing blockchain innovations in the traditional financial system. They offer almost all the advantages of using crypto in DeFi applications while also keeping the stability and trust of fiat money.



The Elrond ecosystem includes many stablecoins such as USDC, USDT, European currency stablecoins, or algorithmic stablecoins from partners.

Types of Stablecoins

There are 4 types of Stablecoins and each has a different mechanism for maintaining its pegged value. Those are:

1. Fiat-backed Stablecoins
   - are Stablecoins being backed 100% by Fiat currencies at a ratio of 1:1
   - popular names: USDT, USDC
2. Commodity-backed Stablecoins
   - work similarly to Fiat-backed Stablecoins, with some differences:
     + Fiat-backed Stablecoins represent the price of Fiat currencies.
     + Commodity-backed Stablecoins take scarce metals like Gold or Silver as the standard.
3. Crypto-backed Stablecoins
   - are Stablecoins that do not reply on real-life assets to maintain their pegged value, instead, they utilize crypto assets directly, hence, making the Crypto market more capital-efficient and liquid.
   - popular names: DAI, VAI, USDP
4. Algorithmic Stablecoins
   - are Stablecoins that reply entirely on algorithms to maintain their pegged value, therefore, no capital is needed to issue this kind of stablecoin, resulting in the ease of producing & expanding it.

Decentralized Autonomous Organization (DAO)

Decentralized blockchains are not companies.
They are managed by users who actively participate in the network (e.g. as validators) and vote on changes according to the consensus mechanism of the specific blockchain.

Basically, anyone can engage and participate in the governance process.

Projects often look for ways to transfer more power and responsibility to their users. But to do so, they need a method that ensures that all the users who participate are truly committed to the success of the project.

One way is to create a collectively governed Decentralized Autonomous Organization (DAO). To ensure that everyone acts honestly, participants are required to invest their own money and buy special "governance tokens" in exchange for voting rights.

The amount of governance tokens represents a person's share of the DAO and voting rights.

Milestones in the History of DeFi

AshSwap launches – the first stable-swap DEX on the Elrond blockchain for high-volume and low-slippage stable asset trading.

CRYPTO WINTER
The collapse of LUNA – UST & the price of tokens go down for a long period of time.
Stable trend: Build to earn

2022

A big year for DeFi
Bitcoin hit several new all-time highs – followed by sharp price declines – and more institutional buying by large companies.

2021

Bitcoin's most recent all-time high at more than $66,000

Elrond Mainnet launches
a highly advanced, scalable, fast and secure blockchain platform for dApps, enterprise use cases and a new internet economy

Total Value Locked (TVL) across all DeFi protocols exceeds $10 billion for the first time

2020

2019

Binance DEX launches
and will become the largest crypto exchange in the world with an average trading volume of $20 billion

Compound Finance launches
& will popularize lending for digital assets and rewarding liquidity providers based on supply and demand
Uniswap DEX launches
& will popularize the Automated Market Maker model, with uses liquidity pools and algorithms to determine prices

2018

End of 2017

The DeFi ecosystem expands.
A variety of projects launch and offer their own tokens – many of which will be overhyped and have no real use

OasisDEX launches
the first decentralized exchange on Ethereum

Mid 2016

2015

Rune Christensen introduces one of the first stable coins – the eDollar
Ethereum blockchain launches

MakerDAO is founded
By Rune Christensen and will be one of the first Decentralized Autonomous Organizations.

December, 2014

November, 2013

Vitalik Buterin announces the **Ethereum project in a white paper**

CREATION OF BITCOIN
The first 10 Bitcoins are sent from Satoshi Nakamoto (anonymous) to the programmer Hal Finney

January 12, 2009

Part 2

Diving into DeFi

What can you do with DeFi?

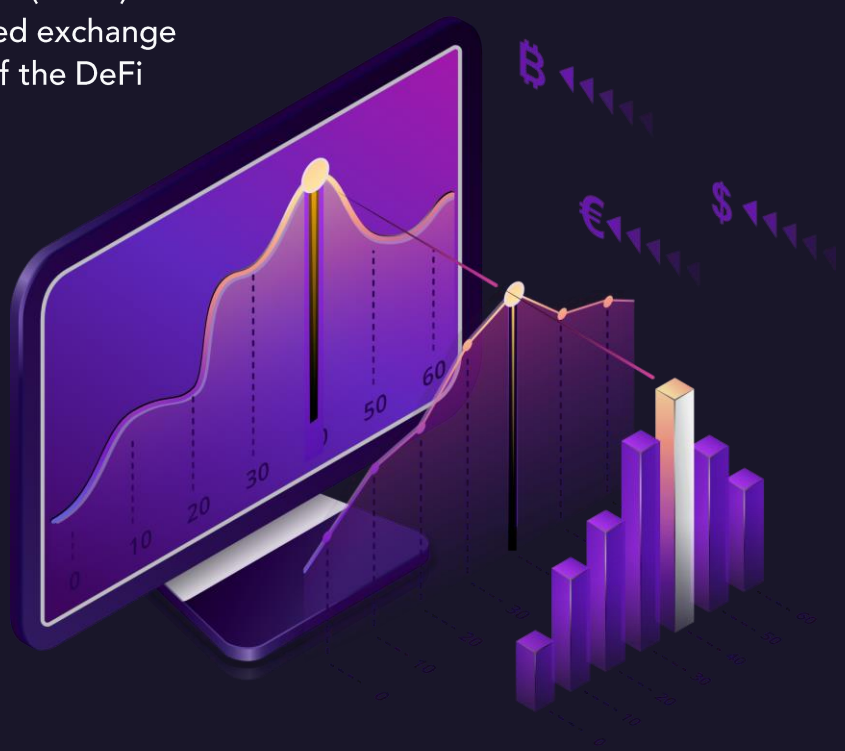
As mentioned above, DeFI uses cryptocurrencies and smart contracts to provide financial services without the involvement of banks. With the appearance of more and more dApps, the possibilities of what you can do with DeFi continue to grow.

There are some popular uses cases we can count on:

- Sending money anywhere in the word
- Storing money using crypto wallets
- Lending & borrowing on a peer-to-peer level
- Trading cryptocurrencies anonymously 24/7

What are AMMs?

An automated market maker (AMM) is a protocol on a decentralized exchange (DEX) and a core concept of the DeFi ecosystem.



Instead of using an order book like a traditional exchange, assets are valued according to a mathematical formula – a pricing algorithm.

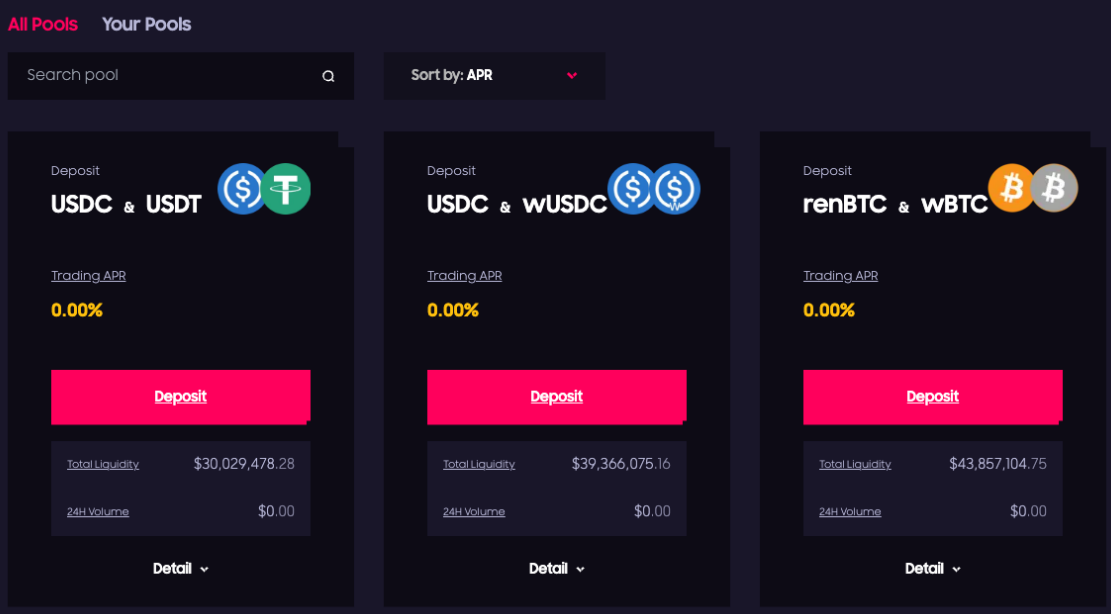
In the world of automated market making, users don't need a counterparty (another trader) to make a trade.

Instead, they interact with a smart contract that "makes" the market. Even though there is no need for counterparties, the liquidity in the smart contract still has to be provided by users in so-called liquidity pools.

What is a liquidity pool?

A liquidity pool is a collection of funds locked in a smart contract.

Liquidity pools are used to facilitate decentralized trading, lending, and other functions and thus are the backbone of many decentralized exchanges (DEX), such as AshSwap.



Users of the exchange called liquidity providers (LP) add a token pair with an equal fiat value in a pool to create a market. In exchange for providing their funds, they earn trading fees from the trades that happen in their pool, proportional to their share of the total liquidity. This essentially allows anyone to become a market maker and earn fees for providing liquidity.

As pricing is determined by an algorithm – if the ratio between the tokens changes by a wide margin, this might cause a high slippage.

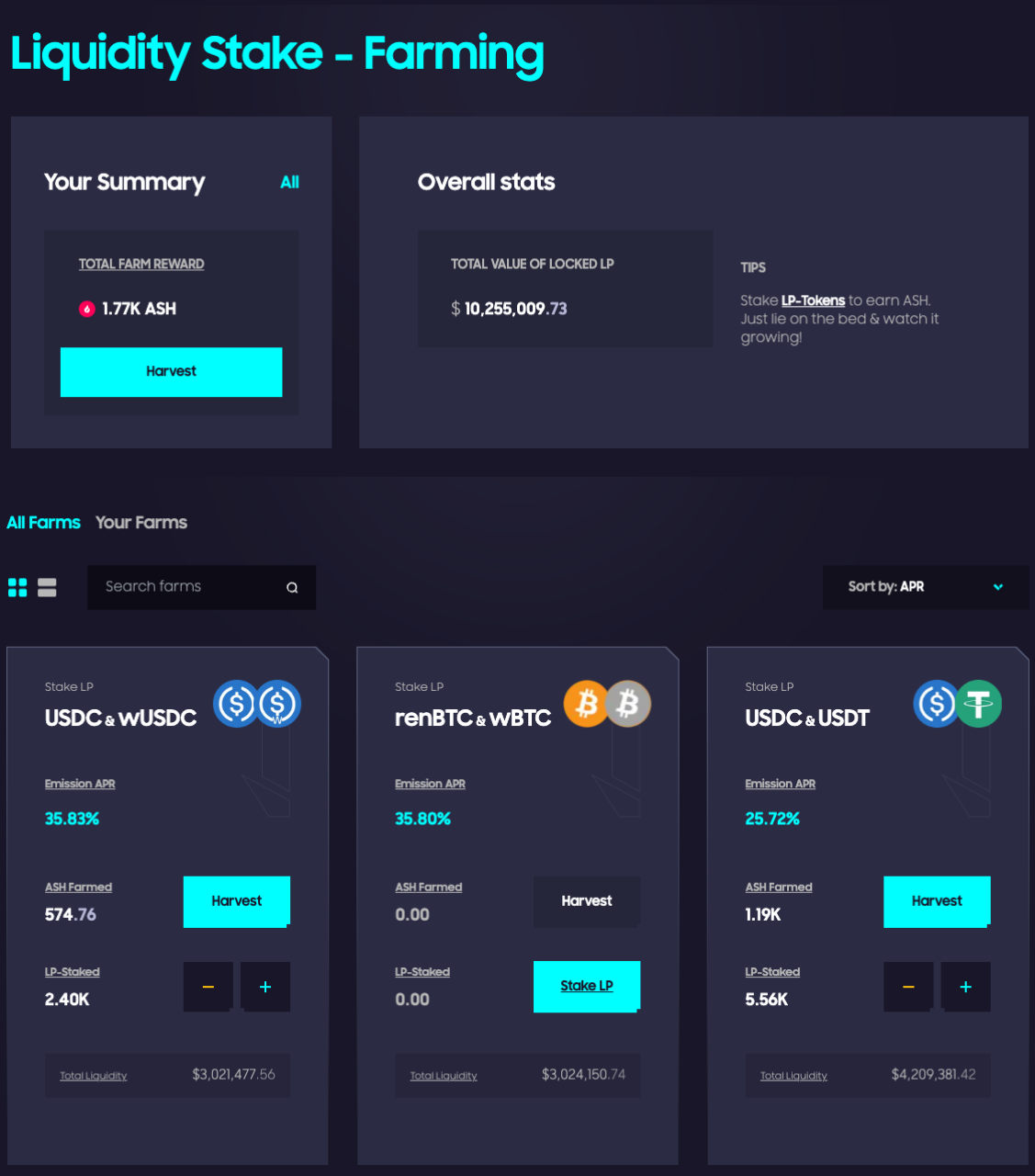
So you can keep in mind:

> The more liquidity in the pool,
> the less slippage large orders can cause.

What is Yield Farming?

Yield Farming is a way to generate rewards with cryptocurrency holdings. This means locking up cryptocurrencies and getting reward tokens.

The most common types of yield farming are liquidity mining (providing liquidity in a liquidity pool) and staking.

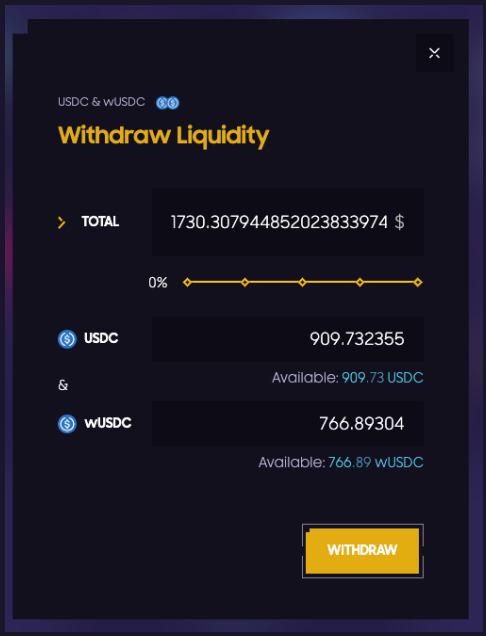


What is Impermanent loss?

Impermanent loss is the biggest risk for liquidity providers.
This term refers to the difference between holding crypto assets (HODL strategy) and locking them in a liquidity pool. It is called "impermanent" because it only occurs when you withdraw your liquidity from the pool.

When you provide liquidity, you own a certain share of the pool and therefore a certain number of both tokens. How many tokens your share contains depends on the current fiat price of the two tokens. The AMM constantly balances the ratio as prices change.

So if you withdraw your share from the pool, you will most likely not get back the same amount of tokens that you deposited.



Impermanent loss does not occur if the price of the token pair increases or decreases in the same ratio, e.g. from 1:10 to 10:100 (factor of 10 for both tokens). However, the more the performance of one token deviates from the other, the greater the impermanent loss. Even if the value of one token increases sharply and the other retains its value, you make a loss because you would have made a higher profit if you had just held the tokens and not deposited them into the pool.

If there is a lot of trading in a pool, it can be profitable to provide liquidity even if the pool is at risk of impermanent loss. However, this depends on the protocol, the specific pool, the assets deposited, and the general market conditions.

Tip: You can use a free IL internet calculator to understand the impact of Impermanent Loss.

https://www.coingecko.com/en/impermanent-loss-calculator

Part 3

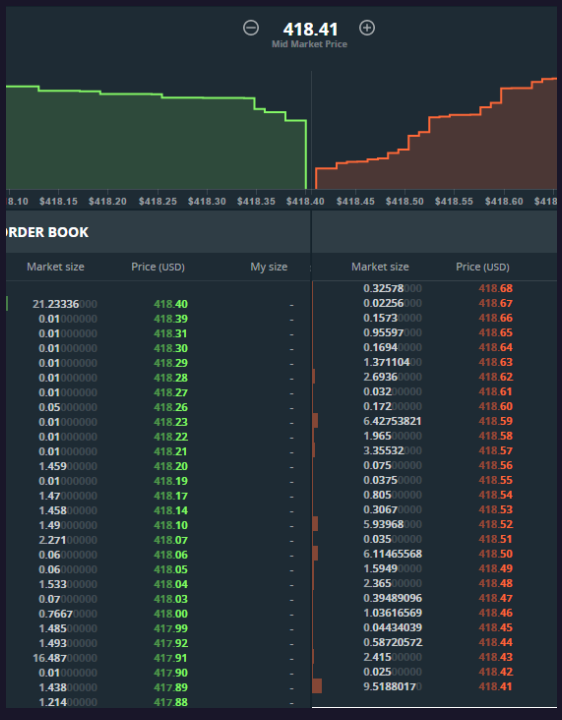
Applications

Decentralized Exchanges (DEX)

Two Types of DEX

The Order-book model

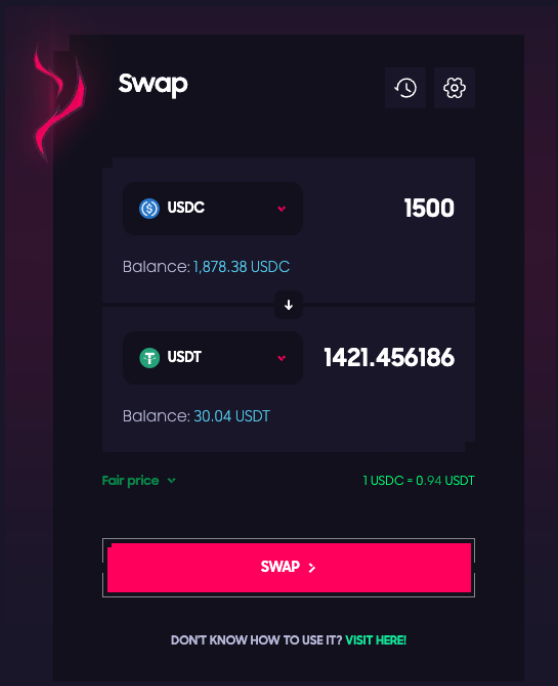
determines the price of an asset by matching the bid and ask price. This model is only suitable for highly liquid assets.



Source: monzo.com

The Auto Market Maker

uses a mathematical formula to predetermine the price of assets. This model is more common in DeFi as it supports the trading of illiquid assets, which are the more popular type of assets in DeFi.



Derivatives

Derivatives are financial products which allow investors to speculate on rising or falling prices. For this purpose, two parties conclude a contract and, so to speak, enter into a bet on how a certain underlying asset will develop in a defined period of time.

For example, the underlying asset can be Bitcoin. If the Bitcoin price rises, the value of the derivative also increases. In this way, the investor can profit from rising Bitcoin prices without owning Bitcoin itself.

Source: binance.com

Likewise, it is possible to bet on falling prices or to use leverage. Leverage means borrowing money for larger investments, which can lead to higher returns but also increases the risk of greater losses. Some derivatives also include the option or obligation to buy or sell the underlying asset at a certain date.

Among the most popular derivatives in the crypto space are:

CFDs (Contracts for Difference)
the price of the underlying asset. CFDs can be held for any period of time.

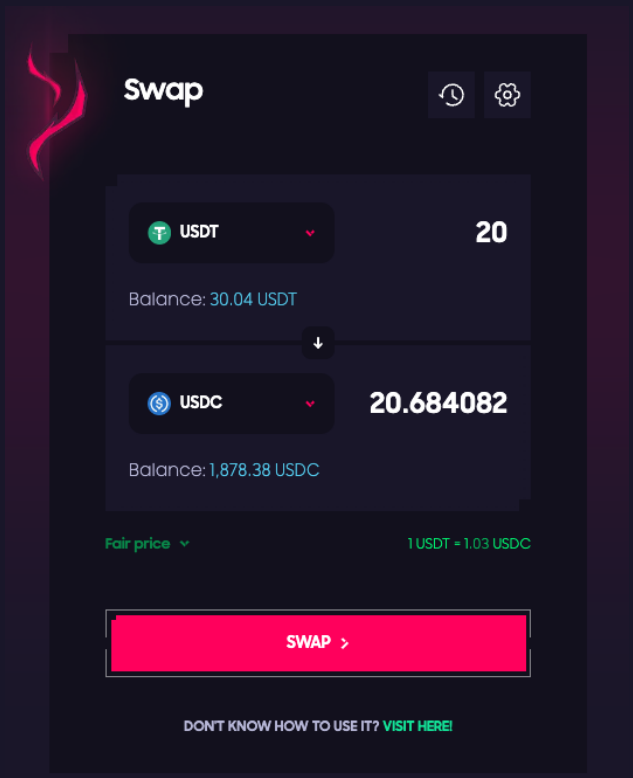
Futures (or forward contracts)
which the purchase or sale of the underlying asset must occur. Instead of actually trading the underlying asset, in cryptocurrencies the debtor usually pays the difference to the "winner".

Options: The investor purchases the right to buy or sell a cryptocurrency at a specific time and price. Unlike futures, however, there is no obligation here, only the option.

Trading → Swapping

Speculating on cryptocurrency price movements by buying and selling coins through an exchange is known as crypto trading.

Swapping means the direct exchange of a certain amount of a crypto token for another token, either between users on a centralized exchange or in a token pool on a decentralized exchange.



Governance

DeFi projects rely on governance mechanisms to make crucial decisions about protocol changes, hiring developers, and even changing governance frameworks.

For example, a borrowing and lending platform may use its governance process to determine the amount of collateral required to borrow money or to make changes to its interest rate model.

Similarly, a decentralized exchange (DEX) platform could use its governance mechanism to allocate funds for the platform's development or to change the way its liquidity pools are managed.

Or, a yield farming platform could use its governance process to hire someone to audit its code. *(Source: Gemini.com)*

Lending & borrowing

Lending stands for the granting of credit. Advanced blockchain applications and dApps are designed to enable users to lend or receive loans in the form of cryptocurrencies.

Extras

About Elrond

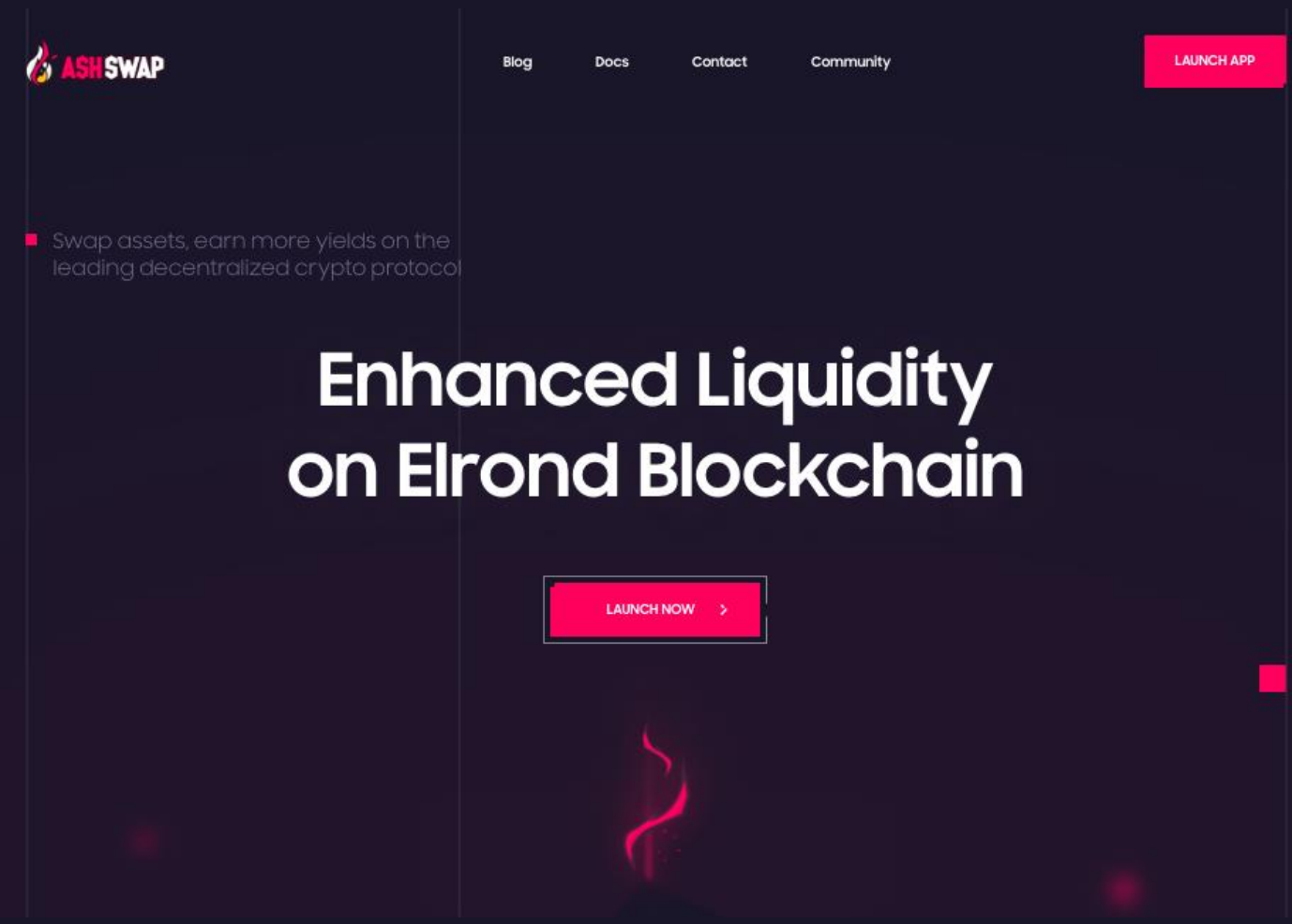
A prospect rising platform with a competing eco-system, having ability to internet-scale blockchain technology have a big community with more than 300,000 people follow. And, very friendly with developers.

You can read more here:

Article 1 Article 2

Reference:
https://twitter.com/beniaminmincu/status/1527957452964118528/photo/1

AshSwap.io



For those who haven't heard about AshSwap, we are the first stable-swap exchange built on the Elrond blockchain. We aim to take part in the DeFi development on Elrond and bring enhanced yield dynamics to blockchain users in general and Elrond users in specific.

Why Elrond?

When considering a blockchain, we look at a couple of criteria such as:

Vision | Technology | Economics Model | Community

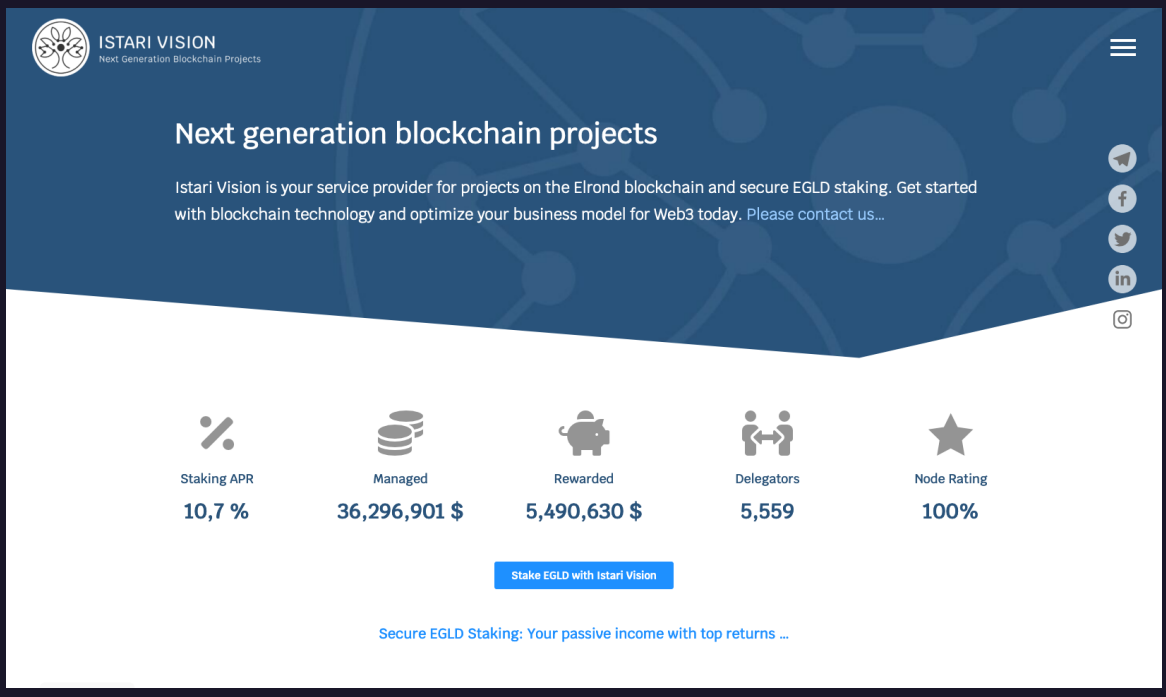
You could read about this article here: link

A powerful project with a strong partner

ISTARI VISION

We chose Istari Vision as a strategic partner to drive our project success. And here's why:

Istari Vision has always been a part of Elrond's success, which is reflected in their valuable contributions to Elrond's development since its inception. With their rich experience in strategy, consulting, and marketing, Istari Vision has already supported many other promising projects such as Gnogen, Knights of Cathena, AshSwap, and most significantly, Holoride (RIDE) in a remarkably successful token launch.



In addition, Istari Vision is one of Elrond's largest staking providers in the world, securing the network with the contribution of around 5,300 delegators currently.

We are highly confident that we will have a successful ramp-up with this strong partner by our side. Together, we'll bring fire to DeFi!

Learn more: istari.vision

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