Secure Evergreen Truthful Heterogeneous Economically Unbiased Market - SETHEUM

White Paper

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Abstract

We see a lot of cryptocurrencies coming up everyday, but what we don't see is a cryptocurrency that is decentralised, secure, scalable and having the option for price stability at the same time, especially one without debt or having to be centralised by a physical reserve in a corporate bank, and one that is also propping adoption.

Setheum gives us the properties of both Fiat and Crypto with PES (Price Elasticity of Supply) without compromising decentralisation or economic stability. A cryptocurrency that has scalable value and trust, setheum provides just that, backed by the resource of immutable trusted cryptography and efficient treasury system with elastic money supply that is immune to hyper inflation and price volatility, and is also 'propping diversity and incentivizing adoption' (propadoption).

The intent of Setheum is to improve upon the concepts of the Stablecoin decentralisation, scalability, mass adoption, diversity and interoperability.

So, Setheum provides six (6) major solutions, the first of which is:

- Providing Humanitarian Aid on-chain
- Fixing the stablecoin inefficiency, narrow adoption strategies & use cases, and centralization Issues
- Propping and boosting Industrial synchronisation and mass adoption of the Blockchain with all kinds of communities
- Filling the gap between financial markets, general-use and mass adoption of blockchain technology, especially stablecoins and cryptocurrencies in general.
- Solving the usability and sovereignty issue on most popular stablecoins.

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Brief History

We could say that, It all started in 1976, when cryptographers Whitfield Diffie & Martin E. Hellman published their paper "New directions in cryptography". David Chaum first proposed a protocol similar to Bitcoin in his thesis "Computer Systems Established, Maintained, and Trusted by

Mutually Suspicious Groups.” in the year 1982. Then S. Even, O. Goldreich, and Y. Yacobi published “Electronic wallet” later in 1983.

Furthermore, since then we’ve seen inventions in this field being introduced by some of the most brilliant minds around, this gradually builds up and leads to what we know today as the “Blockchain”

In 1998 yet again, Nick Szabo introduced the design of a mechanism for a decentralised digital currency he called "Bit Gold". Though Bit Gold was never implemented, it has however been dubbed "the direct precursor to the Bitcoin architecture.” In Nick Szabo’s Bit Gold, a participant would dedicate computing power to solve cryptographic challenges (like puzzles). In the Bit Gold network, solved cryptographic hashes would go through a BFT (Byzantine Fault-Tolerant) public registry and be assigned to the public key of the participant/solver. Each solution would become part of the next challenge, creating a growing chain of new challenges. This provided the Bit Gold network with a method to verify and time-stamp new Bit Golds, because unless a majority of the validation participants agree to accept new hash solutions, they couldn’t start on the next challenge.

When attempting to design a digital currency, challenges like the "double-spending" problem arise. Once data has been created, reproducing it would simply be a matter of copy and paste. Most digital currencies would solve the problem by advocating some control over to a central authority, which keeps track of the account balances. This was clearly an unacceptable solution for Nick Szabo, "I was trying to mimic as closely as possible in cyberspace the security and trust characteristics of gold, and chief among those is that it doesn’t depend on a trusted central authority,"said Szabo.

The phrase and concept of "smart contracts" was also developed by Nick Szabo, with the goal of bringing what he calls the "highly evolved" practises of contract law to the design of trustless e-commerce protocols on the Internet. More papers were published to achieve fairly the same objective, a peer-to-peer trustless and secure electronic monetary equivalent.

All these inventions were neglected and almost forgotten until when we needed them the most in the 2007-2008 financial crisis, what a crash, I had wish we saw the black swan coming earlier and took all preventive measures, but we just simply didn’t trust crypto, and now it’s proven us totally wrong, though it hurts to be wrong we have to admit we must transition to a better economic stability strategy. On the 7th of April 2008, MICHAEL NÜSKEN published “WORKSHOP e€ (ELECTRONIC MONEY).” Then in the same catastrophic 2008, Blockchain was invented by a person under the alias of “Satoshi Nakamoto”, to serve as the public transaction ledger of the cryptocurrency “Bitcoin”. The identity of Satoshi Nakamoto remains unknown till date. The invention of the blockchain for the bitcoin network, made it the first digital currency to solve the “double-spending” (where one could spend a unit of exchange more than once) problem without the need for a trusted centralised authority. The bitcoin design has inspired many other applications, and blockchains that are public, transparent and widely used by cryptocurrencies. The blockchain is considered as a type of payment rail. Then in the catastrophic 2020, I proposed Setheum to change the lives of people and the situation of the NEEDY, most importantly to serve the underserved in this industry and introduce an ethical shari’ah compliant Blockchain and a group of cryptocurrencies.

The Blockchain

Understanding The Blockchain

The blockchain is a decentralised, electronic ledger made up of **blocks** used to record transactions across distributed nodes such that any recorded block cannot be altered retroactively, without the alteration of all the subsequent blocks. This enables the participants to verify and audit transactions independently. A blockchain's database is managed autonomously using a peer-to-peer network and a distributed timestamping server. They are authenticated collectively by participants with similar self-interests. The blockchain does away with having to trust a central authority or server, making it trustless and it is transparent to support auditing and ensuring readability.

1st Generation - Bitcoin (Cryptocurrency)

The 1st generation of the blockchain aims atCryptocurrency is the first implementation of distributed ledger technology (DLT). This allows financial transactions based on blockchain technology or DLT (for the sake of simplicity often seen as synonyms) to be executed with Bitcoin being the most prominent example in this segment. It is being used as "cash for the Internet", a digital payment system and can be seen as the enabler of an "Internet of Money".

2nd Generation - Ethereum (Smart Contracts)

Ethereum blockchain aims to execute 'Smart Contracts' to reduce the cost of verification, execution and fraud prevention. They are independent computer programs that automatically execute predefined conditions. A DApp can have frontend code and user interfaces written in any language that can make calls to its backend, like a traditional App. But a Dapp can have its frontend hosted on decentralised storages such as Ethereums Swarm.
[DApp = frontend + contracts **(**running i.e. on Ethereum**)]**

3rd Generation and Web3.0 (leapfrog)

The first generation of the Blockchain aims at solving the issue of double-spending and providing a decentralised and secure monetary system on the internet, and this is where Bitcoin lands as the first successful implementation of decentralised finance.
The Second generation focuses on the programmability of the blockchain layer, to support a diverse range of application development on the blockchain, and that is when Ethereum was introduced that supports an EVM (Ethereum Virtual Machine) which is a programmable layer on the blockchain that allows the deployment of smart-contracts that can interact with each other on top of the blockchain.
The 3rd generation blockchain revolves around the idea of interoperability and the 3 Ss namely sustainability, scalability, and security. This is where we see Proof of Stake implementations that are environmentally friendly and an alternative to the legacy "Proof of Work" for long-term environmental sustainability with works like Polkadot and Setheum. Here we see decentralised storage like Filecoin, IPFS, and Chia that use Storage Consensus mechanisms. Here we see state upgradability without forking like in Polkadot and Setheum,

we see on-chain built-in DeFi systems like in the case of Acala and Setheum. We also see layer 0 solutions like Polkadot and layer 2 solutions alongside many innovations in the blockchain and crypto space.

But, we haven't seen specific significant contributions to the Islamic Finance market in this space, little to no DeFi presence of the muslim community and those Christians alike that seek out for halal (permitted) zero-interest theologically acceptable DeFi protocols and modes of making money apart from trading speculation on exchanges, staking on PoS and hodling tokens. This is why Setheum was completely rectified into the conclusive go-to DeFi network for people and communities alike that share my enthusiasm as well as those that share my concerns.

Sustainability:

Sustainability is a notion introduced in the domain of environment . It has been extended to almost every field. Albeit the technical means in the previous sections are unquestionably important to the development of blockchains, this topic goes far beyond the pure technical realm. The balance and growth of an industry is always governed by a number of factors. We need a network that is based on PoS (Proof of Stake) so as to be sustainable, have low carbon footprint and better chances for smaller validators that don't have the resources to mine on PoW because it is overpowered by strong highly resourced miners and mining pools - making the network more centralised and breaking the core value of the network. That's why we need PoS consensus on Setheum.

Interoperability:

Blockchain Interoperability is the ability of a blockchain to communicate seamlessly with another blockchain outside its scope of protocols. Blockchain interoperability generally tackles the ability of sharing states and transacting across different chains . Blockchains can be seen as isolated databases, without proper interfaces for intercommunication of data. Blockchain interoperability could enrich use cases for blockchains like portable assets, payment-versus-delivery and cross-chain oracle. Ideally, different blockchains would be abstracted, such that a user can readily manipulate all the functions without accurate understanding of each blockchain.

Elasticity & Economic Stability:

Elasticity is a measurement term that applies to a variable's sensitivity to a change in another variable. In most cases, this sensitivity is the difference in price relative to changes in an array of other factors. In the field of business and economics, elasticity is a reference to the degree to which individuals, consumers, or producers modify their demand. Alternatively, when the supplied amount in response to price or income changes, it is primarily a way to evaluate the change in consumer demand mainly due to a change in price. We need a blockchain with a built-in elasticity system for it's stablecoins in order to curb inflation and volatility in the stablecoins standard of the blockchain, that's why SERP (Setheum Elastic Reserve Protocol) is introduced.

Propping Adoption:

How can cryptocurrencies reach mass adoption and foster diversity of use cases in our day to day lives as effectively as the fiat does and even advantageously better. Propping adoption basically means to support diversity in use cases and propagate adoption.

So for setheum to support diversity and foster adoption of its network, we need to first create a relationship between our financial market, our familiar currencies, our day to day activities, our practical use cases of the blockchain, our communal utilities and our cryptocurrencies.
To do just that, I introduced an efficacious Monetary Regime, an adoption incentivizing Fiscal Regime, the SERP to foster economic stability, and the Equilibrium of blockchain forces - Setheum Blockchain to connect them all with our financial markets and our daily activities.

Filling The Financial Gap

Economics thinking and research faces what the Institute of New Economic Thinking (INET) has dubbed “a crisis of conformity”. Our current monetary policies are clearly against equality and transparency, something the blockchain provides and Setheum as a protocol adds efficiency and stability to this and gives eloquence to the blockchain.

An example in finance that anyone who's traded treasuries is familiar with, is: “Failure to Deliver”, so for example, ***bank A*** will sell a bond to ***bank B***, who borrows it from ***bank C***, and the same bond in a day, might trade across a dozen banks. And if one back office ***fails to make delivery*** of that bond, you get what’s called a “**Cascading Failure to Deliver.**” Because no one knows who actually owns the bond, and that can take weeks to fix. So imagine if you just have a shared database, a database that each of those banks held, that was kept accurate in real time, and that no one could maliciously change or manipulate.
You would know who owns what bonds and you might be able to eliminate half of the existing back offices in big banks, resulting in massive cost savings.

So, to fill the financial gap, Setheum provides the infrastructure for Financial markets & Institutions to develop a reliable blockchain that shares the security, diversity and mass adoption of the Setheum Network, can be permissioned and independently governed, and can issue tokens and make use of the vast array of Setheum Currencies to trade and transact more efficiently and rely on the network’s Economic stability for long term benefits.

The general public will also now have the ability to spend cryptocurrency, send/receive cryptocurrency, and earn passive income with cryptocurrency on the Setheum network, without having to engage in tough cryptocurrency acquisition processes or cashouts.

Setheum Finance Protocol

The financial system of Setheum

As we already know, price-stable cryptocurrencies combine the best of both worlds, both fiat currencies and cryptocurrencies like Bitcoin, but not many have a clear plan for the usability let alone the adoption of such a currency.

Cryptocurrencies and stablecoins in particular, were designed as a direct result of shortcomings in financial markets and in the global economy – lack of capacity for cross-border payments, high transaction fees, opacity on banking systems, investor risks, market hours and exchange limitations, etc. And since the value of a currency is driven by it's network effects, a successfully progressive new digital currency needs to maximise adoption in order to be useful.

Creating just another stablecoin is not enough, the "use case" is what matters more. Are there any practical use cases apart from trading in exchanges, airdrops and staking?

Setheum Finance Protocol brings us a solution, the ultimate solution in fact, where no portion of the stability mechanism is centralised. Therefore no two fingers to type the wrong numbers for "brrr";

I propose "Setheum Finance Protocol" to push cryptocurrencies to reach their full potential, by addressing every practical use case of a stablecoin as a result of Setheum's "Dinar-Serp Stability System" (DS3) that introduces the SERP (Setheum Elastic Reserve Protocol), The Dinar (DNAR) and the Serp (SERP Tokens). My proposed price-stable "SETR" is not just price-stable but also growth-driven, it is the exemplary price-stable cryptocurrency in the forefront towards the wider growth of blockchain adoption, it achieves stability through an elastic money supply, enabled by stable minting and mechanisms based on the "PES" (Price Elasticity of Supply). Setheum Finance also uses seigniorage created by its minting operations as transaction stimulus and more to be discussed on the next subtopic (Setheum Fiscal policy), thereby facilitating adoption.

There is high demand for decentralised, price-stable currencies that should be both fiat-pegged and absolutely cryptonomic in nature, eliminating fiat's inflational fracas and bitcoin's volatile nature. And when it succeeds, then it will have a significant impact as one of the best use cases for cryptocurrencies and a dam of market liquidity. Setheum Finance Protocol makes that balance of truthful trustless equilibrium between fiat currencies and cryptocurrencies. Setheum is leveraging Dinar:Serp cryptocurrency bilateral-collateral backing as the reserve assets for it's fiat-pegged stable currencies, and also maintains its decentralised nature while also avoiding extreme price volatility and hyperinflation. Setheum Finance has combined Bitcoin, Ethereum (discussing the S-EVM further down the pages), Fiat and Stablecoin features that maximise the better of all concepts. The price-volatility of cryptocurrencies is a well-studied problem by both academics and market observers (see for instance, Liu and Tsyvinski, 2018, Makarov and Schoar, 2018).

Most cryptocurrencies, including Bitcoin, have a predetermined issuance schedule that, together with a strong speculative demand, contributes to wild fluctuations in price. Bitcoin's extreme price volatility is a major roadblock towards its adoption as a medium of exchange or store of value. Intuitively, nobody wants to pay with a currency that has the potential to double in value in a few days, or wants to be paid in a currency if its value can significantly decline before the transaction is settled.

But other cryptocurrencies that have infinite supply also have speculations as to how they can sustain hyperinflation in the long run, what happens to their PPP (Purchasing Power Parity) when their always infinitely increasing supply is a matter of concern.

So we need a balance right in the middle, and a mechanism to curb both volatility and inflation, in order to harness the economic stability of cryptocurrencies - their best day to day use cases hide behind the curtains of economic stability.. Setheum gets rid of that curtain, for God says let there be light, so then why do we prevent it from reaching us even though we're in the dark.

The problems of high volatility are aggravated when the transaction requires more time, i.e; for deferred payments such as mortgages or employment contracts, as volatility would severely disadvantage one side of the contract, making the usage of existing digital currencies in these settings prohibitively expensive.

At the core of how the Setheum Protocol solves these issues is the idea that a cryptocurrency with an elastic money supply would maintain a stable price, retaining all the censorship resistance of Bitcoin, and making it viable for use in everyday transactions just like the fiat. However, price-stability is not sufficient for the wide adoption of a currency.

Currencies inherently have strong network effects: a customer is unlikely to switch over to a new currency unless a critical mass of merchants are ready to accept it, but at the same time, merchants have no reason to invest resources and educate staff to accept a new currency unless there is significant customer demand for it. For this reason, Bitcoin's adoption in the payments space has been limited to small businesses whose owners are personally invested in cryptocurrencies.

The reality is that while an elastic monetary policy is the solution to the stability problem, an efficient fiscal policy can drive adoption and a strong technology can prop diversity in use cases, therefore cultivating propadoption. In addition, the Setheum Protocol offers strong incentives for users to join the network with an efficient fiscal regime, managed by the Setheum Reserve [SERP Treasury], where everyone on the network is a participant in the economy and has some rights over the SERP treasury.

That is, the Setheum Protocol with its equanimity in fostering stability and propping adoption in the Setheum Finance Protocol, represents an eloquent complement to 'Fiat currencies' and 'Cryptocurrencies' as means of payment and stores of value.

Introducing Islamic Finance

"Our Islamic Finance System has not changed, it has just got better than ever with Setheum and cryptocurrencies." — Muhammad-Jibril B.A. (Founder of Setheum)

What exactly is Islamic finance? It is a form of financing that complies with sharia (Islamic rulings). Sharia is a broad term, representing a system of beliefs revealed in the Holy Qur'an and the Sunna. While scholars agree on the main principles, there is room for differences in interpretation between the various schools of Islamic religious scholarship and different jurisdictions. In many countries, Islamic and conventional financial institutions operate side by side. The underlying financial principles of Islamic finance have remained unchanged historically since their development over 1,400 years ago. Fundamentally, Islamic finance must avoid the receipt/payment of non-sharia compliant activities (unlawful gain under Islamic ruling). The transaction should have a real economic purpose without undue speculation, and not involve any exploitation of either party or any activities considered sinful. In practice, Islamic capital markets transactions tend to be asset-based, although the underlying assets do not necessarily constitute collateral—and the transactions may, therefore, be effectively unsecured. Even where the assets constitute collateral, the legal environment may well prevent significant and timely recoveries.

The Five Key Pillars of Islamic Finance

There are five key pillars that make up the Islamic Finance sector globally. The first one is Islamic banks; these banks operate under sharia compliance rules and offer financing activities and dealings within the structure of sharia. The next one is Sukuk – or bonds that comply with Islamic law. Sukuk is an instrument that is used to raise capital market funding in Islamic and sharia compliant ways, which avoids charging interest and has specific structures. Then, Sharia Compliant Corporates; these are Corporates that have embedded sharia compliant principles in their Articles of Association and their operational activities. Next comes Takaful, this is the insurance arm of the Sharia finance, which offers insurance like products for the Islamic Finance Industry. Lastly, there are Islamic Fund Managers and Funds that invest in Islamic Finance and sharia compliant instruments.

Why is a Centuries-Old form of Financing Hot Today?

Having been practised since the Middle Ages, Islamic finance is not a new phenomenon. However, it has risen in prominence over the last 40 years, with an especially sharp rate of growth over the last two-to-three years. This is due to institutions, investors and entrepreneurs trying to target the 1.8 billion Muslims across the world with a new range of

increasingly sophisticated financial products and services, which are both ethically and socially sound.

Since the inception of the first fully-fledged Islamic bank in the 1970s, there are now an estimated 300 Islamic banks operating in over 70 countries, comprising most of the Muslim world and many Western countries.

Additionally, more than 45 countries have takaful operators or takaful windows (which enable insurers to offer sharia-compliant and conventional products side by side), totaling 324 entities and more than 1600 sukuk issued in the past 13 years. This evolution demonstrates that Sharia-compliant financial products and services are recognized and accepted as part of the international finance system.

Islamic Finance is now a $2.4 trillion industry that is expected to continue growing rapidly as a potential substitute for conventional financing. Top 20 countries currently include Saudi Arabia, Malaysia, Turkey and the UAE, but the demand for Islamic finance products and services is also growing also in the non-Muslim countries/nations, such as Switzerland, the UK, and Thailand.

What is considered Haram (prohibited by Islam) in Finance?

1. **Riba** - Interest and unlawful gains in a financial transaction/contract.
2. **Gharar** - uncertainty in the fundamental terms of a financial contract.
3. **Maisir** - Gambling is also prohibited in the Islamic law.

The Islamic Finance Industry?

The Islamic Finance industry, one of the fastest growing sectors in global finance, provides a unique opportunity for diverse innovative solutions. Forecasts indicate that the assets in the **Islamic Finance** economy are expected to reach $3.8 Trillion in 2022 (this year).
And of course, Ripple is already performing transactions in banks in the countries across the Middle East.
All of these could be implemented on Setheum for cheaper, faster and more transparent transactions in and outside of the Islamic Finance Industry, on the blockchain.

Staking, Randomness, Equality and Fairness - Islamic Finance on Setheum

The staking method in Setheum is an NPoS(Nominated Proof of Stake) and this mechanism advocates equality, randomness and fairness in the staking system in securing the network as well as earning staking rewards in the process.

The problem with the staking algorithms today is that the rich get richer and the poor (well, you know what I mean), the NPoS system that Setheum uses was built as a part of the Substrate Blockchain Framework which Setheum uses built by the Web3 Foundation and Parity Technologies and is used on Polkadot today and a couple other good blockchains out there. It basically is the best solution out there to counter inequality in the block production of a Blockchain Network and block fees/rewards sharing/distribution methods on-chain. The randomness that Setheum uses is provided by the VRF not RANDAO, same as the one used in Polkadot.
And the validators can earn the SETM tokens to pay for their service as validators that run and secure the network. Therefore, this qualifies as Halal.
The NPoS (Nominated Proof of Stake) that Setheum and Polkadot use do not distribute block rewards to the so-called winning blocks or elite validators that have the highest stake or the most powerful mining rig.

It is halal from my understanding and it's my opinion and we say that everything is Halal unless there is an evidence that it is haram from the Qur'an, Sunnah, Ijma' of the Sahaba or the Tabi'een, or the Atba' tabi'een, or ijma' of the Ulama, or from the logical deduction according to the principles of the purposes of Shari'ah, and Allah knows best.

The Islamic Finance just happens to be the best option out there for best rewards and best long-term economic sustainability and reliability. Setheum just happens to implement just that for you and I.

Cryptocurrency vs Mobile money

[Cryptocurrency vs Mobile money—Setheum | Muhammad-Jibril B.A.]

The way many people see mobile money is so distinct from what it actually is. I live in China where e-payment is pretty much the most familiar form of transaction in the country. The Chinese often ask me, do you have payment options like WeChat and Alipay, or

questions like digital payments or cash which are more prevalent in your country? And believe me, China is way ahead of pretty much any other country in digitization. And they did in such a short time and adopted it nationwide.

There is a misconception that Mobile money functions just like Alipay or WeChat but using phone numbers as accounts and calling credit/broadband as credit/money something like WhatsApp for payment for instance. This belief is wrong, not even close.

Mobile money and payment apps work verily distinct in both their mechanisms and policies. But this part of the paper will focus on the comparison between mobile money and cryptocurrency. Is mobile money more secure, is it more efficient, is it faster, is it cheaper, all these questions lead to a big NO! It's a crystal clear answer and here is why. First of all, when comparing these two, there are factors to consider which we will categorically determine to know which system has the upper hand.

4 Factors to consider:

1. Fee Structure
2. Usability
3. Accessibility
4. Reliability

Fee Structure

The fee structure of a monetary system is the #1 factor to consider when choosing a payment system. The fee structure can make or break a payment system, it can also make or break the users and the community of the system. Cryptocurrencies have transaction fees anywhere from $0.000001 to $2.5. Some cryptocurrencies like in Setheum charge transaction fees in weights (bytes) providing onem of the cheapest fee structure around while others like ethereum offer more expensive fees of up to hundreds of dollars (not the ideal fee structure here—I know but still better than percentages in mobile money, so Setheum is better used here). It's common to transact cryptocurrency of more than $1 million with a very low transaction fee of $1 for instance, contrary to the percentage fee structure in banks, mobile money, swift, or any other form of remittance. With mobile money, the fee structure is chaotic, the transaction fees range anywhere from 1% up to 15%. And the more money you send the cheaper the fees, which invites inequality.

Unlike cryptocurrency, mobile money charges you more when you send less, cryptocurrency charges you less when you send less, especially in the case of Setheum and Polkadot where fees are based on weight/bytes that they occupy in a transaction.

Backwards pricing/ fee structures often mean that the people in the lower income range, who make the smallest transactions, end up paying the highest fees percentage wise. Mobile money solutions have the potential to provide affordable access to financial services to the poor, but regressive fee structures limit the potential benefits for this large segment of the

population especially in third-world countries. So unfair and inefficient. Cryptocurrency clearly won this category with a 7 star rating, while mobile money is completely rekt.

Usability

Usability is the scale to measure how well a user in a specific context can use a product or service to achieve a defined goal effectively, efficiently and comfortably. So, how usable is the mobile money system? I would say as far as I know not that usable but pretty much does the job right? Wrong. The job is to transact seamlessly, securely, efficiently, affordable with the best experience possible. Cryptocurrency offers al the usability factors except one in some cases, just and only just in some cases cryptocurrency might not be a great experience in places where the convenient experiences are not offered, for example Nigeria, I remember the first time I bought cryptocurrency back in 2017 in Nigeria it was a horrible experience, but it got a lot better now.

Today in most 3rd world countries that need remittance systems like that of Setheum's transactions, it is hard to get the convenient experience that props usability and adoption. There are good payment systems out there that offer nice experiences that rival that of banking experience, but they are mostly offered in 1st world countries like the USA, UK, Germany, Switzerland, et al. We need to make this experience a global phenomena that pros usability, adoption and accessibility. And we at Setheum Labs are tackling it head to head with the best solutions that offer the best experience that props usability, adoption.

Accessibility

For a cryptocurrency to be widely used and adopted by the masses, it needs to be as accessible and efficient as possible, it needs to be on a global access scale. In most of the many changes to the global financial and economic system throughout modern history , the most benefits have been reaped by generally wealthy white men. Despite the promise of cryptocurrency to decentralise and democratise finance, the cryptocurrency market is very much on track to repeat this same pattern, unless we intend to and do make it accessible to everyone including more of the under-included segments of the population.

Today, cryptocurrency is becoming so accessible everywhere, you can buy any cryptocurrency with your Visa or MasterCard today wherever you are whatever the time is. Unlike cryptocurrency, mobile money is not as accessible as it seems to be, you have to deposit cash if you don't have a bank account, whereas you can even get a cryptocurrency debit card for almost free without having to own a bank account in many places.

Mobile money though is more available OTC than cryptocurrency in many countries especially in developing countries like Nigeria where I'm from. During this pandemic though, the best solution is definitely not holding cash and to an extent not mobile money. Cash was quarantined here in China in the early days of the coronavirus, because it was reported to be

an active agent for the spread of the epidemic which became a pandemic. And OTCs are not the best options for sure.

Setheum Labs is working on that head to head with the development of the Setheum Blockchain that provides the best cryptocurrency system and payment system yet. Cryptocurrency again won this category while mobile money fell behind.

Reliability

I haven't used any mobile money provider yet, but I've interviewed a couple of mobile money users from various countries in Africa and what I found out was surprising. As an average East African layman, mobile money does not give you the ability to transact between your family and friends or to even use it as a payment gateway for your storefront, your customer can't buy something from you and send you the money directly. So basically mobile money is not a reliable replacement for cash nor is it a reliable remittance system.

Mobile money has a lot of reliability issues, one example is that operators / third party providers are involved, and they can increase or decrease fees as they wish, they can refuse to attend to a certain customer/user. They can bury transactions. They can go out of business anytime and they can leave certain areas / locations for others. It's not done this way in cryptocurrencies and public blockchains like Setheum, Polkadot, Bitcoin, Ethereum et al. The blockchain is decentralised and it is very unlikely and almost impossible to go out of business. The blockchain fee structure is not controlled by a person or a few persons, it is governed by a global community.

Human errors are very unlikely especially in fully decentralised cryptocurrencies like Bitcoin and Setheum where the monetary policy implementation is fully algorithmic and on-chain, and all holders of Setheum coins have a say in the governance of the blockchain where you can propose a referendum and all coin holders can vote to pass it or not. Mobile money or anything else including banks come nowhere close to the reliability and community benefits of cryptocurrency. Cryptocurrency again won this category while mobile money falls mega far behind.

The Blockchain Network

Setheum is a DeFi operating system, liquidity exchange provider, and financial system that resolves around the issues of interest, liquidity and stablecoin reliability issues mostly raised by centralised stablecoins by creating algorithmic elastic stablecoins stabilised by prestine crypto assets and managed by the network's Shari'ah backed governance system that gives back all upturn elasticity returns and market growth to the community and provides zero-interest loans for all muslims and non-muslims alike.

Setheum is built with the Substrate modular interoperable blockchain framework and is based on the Nominated Proof of Stake (NPoS) consensus algorithm. In Setheum, one can pay for transaction fees in any token currency without having to hold Setheum's native

token. Setheum implements a free and fair economic system that pursues equality of opportunity and the maximisation of public utility in the crypto-economy.

Inspiration

The Inspiration behind Setheum was initially to provide an alternative payment system to the current FinTech atmosphere. To create a system that is bipartisan and open to the public providing an easy to use remittance network that is also easy to onboard, attractive for day-to-day spending and transparent. Something I could build an ecommerce platform on and use as the main payment option and a bridge between traditional finance and cryptocurrency in both low-level and high-level endpoints, especially in the less developed and developing parts of the world. Then I built the system on the foundation and principles of Islamic Finance in the Shari'ah to make it halal (permissible) to all muslims and beneficial to all muslims and non-muslims alike.

Motivation

The motivation is to make it easier for the free-flow of capital internationally and intersystematically (interoperability between distinct systems/networks), to maximise capitalization and economic growth under the umbrella of the Shari'ah, realising that this is the solution for many of the problems challenging communities around the world, inequality in capital distribution and discrepancies in the free flow of capital between equality of opportunities and systematic fairness in capital distribution and financial regulations.

Equality of opportunities cannot be achieved without the free-flow of capital, while there is no systematic fairness in the distribution of capital there can be no free-flow of capital in the hands of the public. In Setheum, the capital will be directed to the public for the public utility in the Setheum economy through various mechanisms including CashDrops, to be discussed further below, and the Setheum Public Fund also to be discussed further below.

Principles and Core Values

Setheum has a set of Principles and core values that shall not change or get corrupted in its underlying governance. Setheum is following the Islamic Finance principles and core values in compliance to the Shari'ah in respect to Economics, Monetary and Financial affairs.

Setheum Monetary Policy

Retaining purchasing power is the primary objective of a stable currency. Given that most of the goods and services produced are being consumed domestically, It is important to create cryptocurrencies that peg to the value of localised fiat currencies. And given that the US

Dollar is the most recognisable and acceptable international yet localised fiat currency, we recognise the strong importance and activity of the US Dollar, and we provide SETUSD (pegged to $1) and SETR (pegged to $0.1). For number details on the currencies, read further below.

The SETUSD is maintained by a CDP (Collateralized Debt Position) System based on the SERP whereby the users of the CDP maintain the value just like MakerDAO (without the interest rates of stability fees) and the SERP maintains the SETR's stability with the SetheumDEX (aka. SetSwap) and the SETUSD, creating an independent ecosystem that neither needs external mechanisms to stabilise nor to expand as it also has inflation rates and mechanisms governed by the Financial Council (an on-chain governance council) that incentivizes users to spend or trade (read further below to see the uniqueness of the Setheum DEX and other Setheum products); Unlike today's popular monetary policies, it is a unique one in the Setheum Reserve, first of all the Monetary Aggregates are extended and incorruptible in Setheum Finance, so Setheum does not compute high-powered money (HPM) into its currencies, which is basically the multiplication of the Monetary Base (MB or M0) with Fractional Reserve Banking.

Setheum mints SETR through an elastic money supply relying on PES and through the on-chain SERP inflation mechanisms and the EFE (Exchange Fee Evaluator - read further below for the unique EFE), so the amount of SETR to be minted is proportional to the pairing of DNAR:SERP and its price relative to the SETUSD versus the corresponding DEX pool relative to its fiat peg and its market cap. Whenever SETR or SETUSD is minted automatically by the SERP, some amounts are used for T1 tokens (SETM, SERP, DNAR, HELP) buyback (read further below for these numbers too) and these SERP:DNAR tokens are used in exchange to buy back excess SETR:SETUSD from the market through the built-in DEX (SetheumDEX/SetSwap). In the long term this provides a very strong backing for the SERP's stablecoins as the values of the T1 tokens increase overtime in the market;

If the system detects a price deviation from a stablecoin's peg, the Elastic Reserve protocol applies pressure to stabilise the price back to peg ratios. Therefore, based on the principles of demand and supply, the SERP (Setheum Elastic Reserve Protocol) contracts or expands the supply relative to the price change to stabilise the market price of the stablecoins.

Since contracting the supply of money isn't free; like any other asset, money needs to be bought from the market. The centralised authorities like Central banks and governments support contractionary costs for pegged fiat systems through a variety of mechanisms including intervention, short-term instruments and the bonds, thus incurring interest expenses, hiking of market exchange rates and reserve ratio requirements, thus losing revenue. Put it this way, governments and central banks absorb the volatility of the stable currencies they issue.

In Setheum, in the short term, the DNAR:SERP reserve pairs absorb SetCurrency contraction costs through newly minted tokens that get swapped on the SetheumDEX/SetSwap for the SetCurrencies which then gets immediately burned in the SERP directly before it even leaves the DEX. The Contraction and Minting method in SERP, is inspired by the Terra model of contraction and minting for price-stability two years back when I first went into designing how Setheum should be, and I went through writing and scrapping a lot of whitepapers over the years. But the SERP improves much on that.

Setheum Fiscal Policy

Users of the setheum network get what I'd like to call Cashdrops from the SERP-Treasury that was issued due to a need for price stability by increase in supply or due to SERP inflation mechanisms for economic growth.

CashDrops are essentially cashback given (from the CashDropFund in the SerpTreasury, so it's not unlimited) to the users of the SetCurrencies whenever they claim on their transactions. So, each transaction has a sort of toggle button that says "claim cashdrop" before the transaction is sent (transfers "to" only).

Setheum Foundation & the SPF

The Setheum Foundation is the non-profit organisation that supports development and growth in the Setheum ecosystem. It supports projects and teams building on Setheum with financial grants, technical support, community partnerships and community support.

The Setheum Foundation stewards the **Setheum Public Fund (SPF)** that supports humanitarian and environmental causes to help the needy and underprivileged communities, minorities, orphans, physically challenged, the sick, refugees, and animals around the world.

It focuses on funding **NGOs**, Public Health and Research Institutions around the world and communities in need to lessen the suffering felt by all kinds of people, communities, animals around the world and even ecological problems. The Setheum Foundation also supports R&D in blockchain tech, cryptography and computing for the common good of the public.

The Funds review:

1. **Setheum Treasury**: Supports the Network & Community et al. [OnChain]
2. **Setheum Foundation Fund**: Supports the Network, Project, Foundation & Community et al. [OffChain]
3. **Setheum Public Fund**: Supports communities in poverty, sickness, orphans, refugees, underprivileged communities, health research institutions, public good organisations, humanitarian NGOs, ecological research projects, history preservation projects, et al. [OffChain - by Setheum Foundation]

Setheum EVM (SEVM)

The Setheum EVM (**SEVM**) enables Solidity smart contracts to be deployed on the Setheum blockchain with minimum changes. It also offers many distinct features such as "**bring your own gas**" (paying fees in any tokens other than Setheum's native token), and an **on-chain automatic scheduler** that enables use cases like subscription and recurring payments, **microgas** (paying very miniscule gas fees) etc.

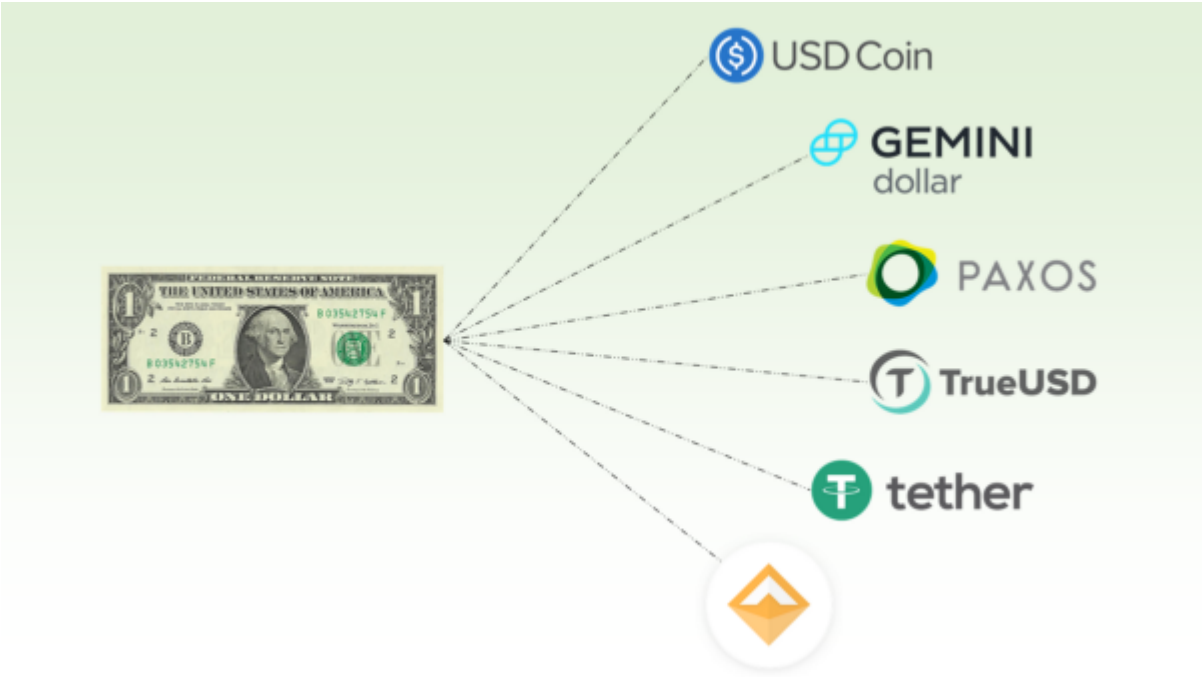
Are stablecoins ready for the masses?

Did you know that most cryptocurrencies will almost certainly never be as useful to the masses? The laymen who are looking to efficiently spend and earn their daily bread through a much more reliable form of currency and payment system, but have no choice because the existing cryptocurrencies are mostly focused on engaging with the technology and the price charts.
And of course also due to the fact that they cannot have easy access to these cryptocurrencies, and more importantly the price volatility that comes with a relatively small market like bitcoin compared to fiat or gold.

The liquidity of cryptocurrencies have totally different meanings to the masses compared to the cypherpunks, crypto enthusiasts, investment funds and traders.

To the masses, liquidity simply means the level of familiarity and transfer-ability in their local community, so how easy is it to buy groceries with this, how easy is it to keep track of my spending habits (the blockchain is actually best at that than anything), how stable is this currency, why is it better that my local bank account and currency (the most important, shadows all the rest), how easy is it to exchange this for another currency, how large is the community that actually spends and accepts this as legal tender in my community and my favourite malls and souqs, how popular and accredited is it on the online services I trust, so what is the PPP (purchasing power parity).

These are the simple concerns of a layman about any currency, so basically how is this convincing enough to convert the layman into using, earning, spending and trading this currency?



[Existing popular US Dollar stablecoins]

The multiple answers that we've seen as a result of this speculation, is the birth of stablecoins, cryptocurrencies that are pegged to fiat currencies in price and as some of them are backed by fiat in the bank like Tether, some are backed by other cryptocurrencies like in the case of Maker DAO.

But there is an issue of centralisation with most if not all of the popular stablecoins out there. And issues have emerged concerning the legitimisation of their practises.

[Tether stablecoin]

Tether (USDT) for example, was known to be involved in a lot of scandal controversies, you can check references for "Tether's $850 million Controversy—Forbes", and "Tether's 20 Billion dollar scandal—Hackernoon", and here, and most importantly to the topic of centralisation and the human error involved in minting from a central trigger at one man's finger tip—check references for "Tether 'accidentally' minted $5 billion worth of Tether tokens over the weekend, sending the price of Bitcoin down significantly—CoinRivet".

Setheum has uniquely thought of this and brought about a unique solution to make a difference. Setheum is decentralised and the network's stability techniques are fully transparent for the public to see.

There is no man or a list of people held responsible for the stability of the Setheum Economy of stablecoins, it is absolutely decentralised and immune from central attack or human intervention in the stability mechanisms, no forging of coins by any central entity.

Setheum offers stablecoins to laymen of a lot more regions with derivatives they are most familiar with so they don't have to learn a whole new currency and it's language/charts. Setheum acknowledges economic & financial regionalisms and so it adopts pluralism in its network.

On top of that, Setheum Labs is also consolidating a community of Setheum related interests that will bring together some of the household names around the communities we plan to impact, bringing a galaxy of partnerships and services to the Setheum community that are ready to make life easy for the masses in their respective communities.

Setheum will be verily accessible to the masses and Setheum will provide the right and best answers to the questions and concerns of the layman. Setheum is set to impact the masses in a way that no cryptocurrency has addressed before. The stability, familiarity, liquidity, strong strategic PPP, all the amenities of fiat plus the luxuries of cryptocurrencies and the perks of the Setheum Network

Setheum is leading the way for a unique approach to make a difference in its industry. Setters are people not just enthusiastic about the name "Setheum" but also deeply connected to the unique form of thought that is set to make a difference, a trait found in all Setters (Pace Setters).

Setheum Elastic Reserve Protocol (SERP)

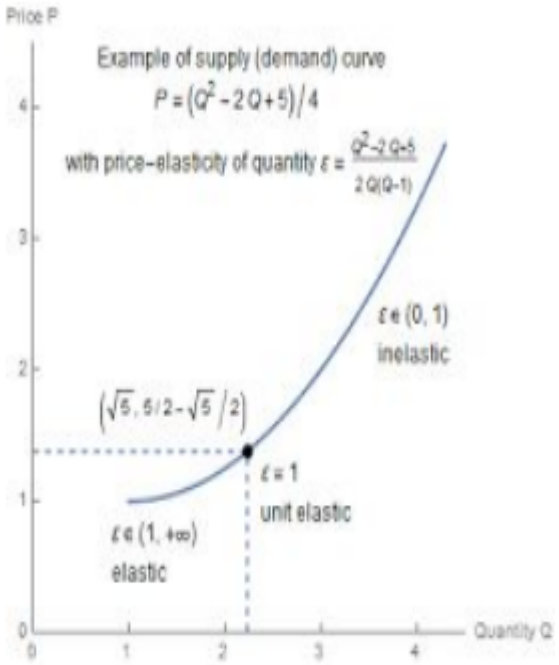
The Setheum Elastic Reserve Protocol (SERP) is the backbone of the Setheum Economy, it is the stablecoin financial system of Setheum first of its kind and unique to Setheum.

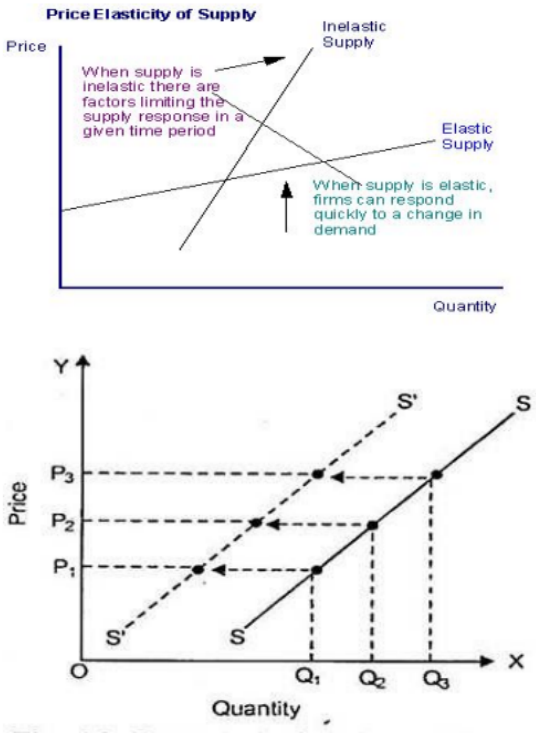
The Serp implements algorithmically stabilised stablecoins that are serped or stabilised algorithmically with the Serp Reserve Assets called the "Serp and Dinar" which are a Tier-1 token class (free-floating cryptocurrency) on Setheum, sort of like the gold-standard but superior in technology and system utility, **bilateral-backing (with SERP & DNAR)** and a lot more.
Elasticity is a proportionate change in one variable over the proportionate change in another variable:

$$pes = \frac{\%\Delta QS}{\%\Delta P}$$, and

$$serptes = \frac{\frac{mp}{pp} \times S}{1} \;||\; \frac{\frac{pp}{mp} \times S}{1}$$

Where ***QS*** is the quantity of supply and ***P*** is the price, representing the %Change in Quantity / %Change in Price. Where ***S*** is the total Supply, ***mp*** is the market-price, ***pp*** is the peg-price. If price is above peg, ***mp/pp***, else if price is below peg, ***pp/mp***;





The SETR is automatically adjusted by the SERP-TES, while the SETUSD is adjusted by the SERP-SetMint based on CDPs (Collateralized Debt Positions). When a Setheum StableCurrency goes higher than its peg in price (higher demand than supply), then that height in demand is injected into the economy to stabilise the price of that stablecurrency, we call that a SerpUp, the opposite is done for a SerpDown to Serp down the supply.

The supply injected into the economy during upturns/serpups of a stablecurrency is distributed as such 75**% to buy back the Serp Reserve Assets for burning, and** 25**% to the "CashDrop Pool" for users to claim.** The SERP also issues a per period inflation rate balance for the Setheum stable currencies, the inflation rates are initially set as shown below, and the inflation rate can be adjusted through the governance under the Setheum Shura Council with a democratically voted approval by the members of the Shura Council. The Governance is discussed further below.

Inflation RPM (Rate Per Minute) for Stableoins:
SETR = 10,000;
SETUSD = 1,000;

The injected inflation balance will be distributed as such in the table below:

BuyBack DNAR	BuyBack HELP	BuyBack SERP	BuyBack SETM	CashDrop Pool
20%	20%	20%	20%	20%

CashDrops

CashDrops are essentially cashback given (from the CashDropFund, so it's not unlimited) to the users of the SetCurrencies whenever they claim on their transactions. So, each transaction has a toggle button that says "claim cashdrop" before the transaction is sent (transfers "to" only). Below is the CashDrop claims minimum transfer amounts that can claim and cashdrop rates per currency of claim (these parameters can be updated via network runtime upgrade with the approval of the governance council of Setheum):

Currency	Min. Claimable Transfer	Max. Claimable Transfer	Claim Rate
SETR	10 SETR ($2.5)	2_000_000 SETR ($500k)	4%
SETUSD	4 SETUSD	100_000 SETUSD ($100k)	2%

Tokens & Stablecoins

There are two classes of currencies, free-floating tokens (what I like to call the "Tier-1 Tokens" (T1)), and stable-currencies (what I like to call "Tier-2 Tokens" (T2) OR simply "SetCurrencies") in Setheum. They are explained in the table below with initial details and characterizations.

Ticker	Name	Class	Initial Supply	Price	Init Market Cap (Ecosystem = $9,163,303,000.03)
DNAR	The Dinar	T1	700,000,000 (small sup)	$0.14	$98,000,000 (nano cap)
SERP	Serp	T1	2,580,000,000 (large sup)	$0.05	$129,000,000 (micro cap)
HELP	HighEnd LaunchPad	T1	700,000,000,000 (XL sup)	$0.0007	$490,000,000 (small cap)
SETM	Setheum	T1	31,330,300,003 (large sup)	$0.01	$313,303,000.03 (small cap)
SETR	Setter	T2	20,000,000,000 (large sup)	$0.25 (stablecoin)	$5,000,000,000 (medium cap)
SETUSD	SetDollar	T2	3,133,000,000 (large sup)	$1 (stablecoin)	$3,133,000,000 (medium cap)

The SetMint Protocol

Multi-Collateral CDPs on SetMint

Inspired by MakerDAO Protocol, the CDP (Collateralized Debt Position) protocol on Ethereum. The Setheum CDP has zero interest rates, zero stability fees, and is fully halal and collateralized.

This differentiates SetMint from any other CDP Protocol, making it by far the only halal loan protocol in the entire industry. And it is ***Multi-Collateral.***
Just reserve some collateral to mint some **SETUSD**, when returning the loan just return exactly what was loaned and unreserve the collateral with no fees and no interest.

This lets the muslim world also participate in the industry and take part in trading and yield making strategies that are within their dome of principles, for me this is a gamechanger that I wished was there for me, therefore I am building it for people like me who need it but haven't been given the chance to be pleased by it, and also non-muslims that want to break-free from the interest-based alternatives to a more efficient system based on truth, fairness and equality.

Every SETUSD issued through SetMint is backed in excess by a cryptocurrency and is stabilised against the USD through the SetMint Protocol - a flexible dynamic system of Zero-Interest Collateralized Debt Positions (CDPs) in extension to the SERP - the Setheum Elastic Reserve Protocol, on-chain governance and incentivized key actors.

The CDP loans system design in Setheum is inspired by the first decentralised stablecoin MakerDAO project, which has become the DeFi building block in the Ethereum ecosystem.

Along with a set of incentives, supply & demand balancing, the SERP stability mechanism and risk management mechanisms, as the core components of the Setmint protocol, the value of a SetDollar (SETUSD) is pegged to the value of a US Dollar (USD), with relative stability and this helps stabilise the SETR through the Setheum Elastic Reserve Protocol (SERP). The SETR and the SERP relatively stabilise each other with the help of the SERP too.

Unlike in Ethereum, where an external liquidator is required to monitor and close dangerous positions, which is by and large due to limitations in Ethereum, the SetMint Protocol is able to use the substrate Off-chain Worker (an automatic scheduler unique to parity's Substrate) to automate the process and inherently increases the security and stability of the stable currency.

[Setheum - SetMint Protocol]

The SetMint CDP Process

- **Depositing Collateral**
  The user creates a CDP by depositing one of the accepted collaterals.
- **Borrowing SetDollar and Opening CDP**
  The user requests and borrows the desired SETUSD (SetDollars) according to the collateral parameters set by governance based on the chosen collateral
- **Paying back SETUSD**
  To close a CDP, the user pays back the borrowed SETUSD, with no-interest of course, and no stability fees, they need to deposit enough SetDollars (SETUSD) to pay back the outstanding debt in the CDP, with no-interest policy, there is no need to pay a stability fee or any accumulated interest whatsoever, this is unique to Setheum.

And with the SERP (Setheum Elastic Reserve Protocol) in place, it can absorb any instability in the stablecoins, this eliminates the need for stability fees or interest rates.

- **Closing the CDP**
  After the protocol receives the outstanding SetDollars (SETUSD) debt, the CDP becomes debt-free, and then the CDP holder can retrieve their collateral, the CDP can and is then be closed by the SetMint protocol.

Price Stability Mechanisms in the SetMint

The SETUSD is designed to peg to the US Dollar at a ratio of 1:1 that the Network aims to maintain the value of one SetDollar approximately to one US Dollar at all times.

Our strong peg to US Dollar is achieved through an automatic SERP-TES elasticity algorithm, an automatic stability algorithm in Setheum, a risk management algorithm in the SetMint Protocol, together with community governance, the DEX and the Price oracle.
The SERP-TES has been discussed above, more details on the risk management are further below.

Risk Management in the SetMint

The Financial Council has governance rights and responsibilities for managing risks of the SetMint on the Setheum Network, including authorising risk parameters adjustments (manual and/or algorithmic).

Multiple asset types with distinct risk profiles are accepted as collaterals for CDPs, therefore, all risk parameters of the CDPs and liquidation parameters are separately set up across various collaterals and are to be adjusted by the SetMint Protocol through on-chain governance by the Financial Council.

Collaterals currently are **SETM**, **SERP**, **DNAR**, **HELP**, **SETR**. More collaterals could be added through runtime upgrades by system governance. The collateral parameters are as below:

Collateral	Liquidation Rate	Liquidation Penalty Rate	Required Liquidation Rate	Max. Debit Value
SETM	105%	5%	110%	25,800,000 SETUSD
SERP	105%	5%	110%	25,800,000 SETUSD
DNAR	105%	5%	110%	25,800,000 SETUSD
HELP	105%	5%	110%	25,800,000 SETUSD
SETR	103%	3%	106%	33,000,000 SETUSD

Initial Token Allocations

Currency	Treasury	SPF	DEX Offering On-Chain	Foundation	Team & Private Sale	Advisors and Partners	CashDrop Pool	Airdrops
SETM	10%	10%	Approx. 20%	20%	30%	5%	-	5%
SERP	-	10%	Approx. 30%	20%	30%	5%	-	5%
DNAR	-	10%	Approx. 30%	20%	30%	5%	-	5%
HELP	-	10%	Approx. 30%	20%	30%	5%	-	5%
SETR	-	10%	Approx. 20%	10%	30%	10%	10%	10%
SETUSD	-	10%	Approx. 20%	10%	30%	10%	10%	10%

Vesting Schedule on Allocations

Currencies	Advisors and Partners	SPF	Foundation	Team
SETM	50% for 7 years	50% for 9 years	50% for 23 years	50% for 23 years
SERP, DNAR, HELP	52% for 5 years	52% for 7 years	52% for 19 years	52% for 19 years
SETR	30% for 3 years	30% for 3 years	30% for 3 years	30% for 3 years
SETUSD	25% for 2 years	25% for 2 years	25% for 2 years	25% for 2 years

The Economics of the Vesting Schedules

This is an in-depth insight into the Setheum tokenomics covering market cap and price prediction of all the Setheum currencies for the coming 3 years based on the whitepaper metrics that include Vesting schedules on token allocation, staked tokens at genesis, TVL (Total Value locked) in the CashDrop Pool/ Fund, and TVL in DEX.

Disclaimer: Note, this does not take into consideration the buyback and burning and inflation/deflation of these tokens either from staking, slashing or the Setheum Elastic Reserve Protocol (SERP). This only takes into consideration the circulation and locking of supplies over the coming 3 years predicting demand and translating it into market cap and pricing forecast in some ways similar to CPI (Consumer Price Index) in this sense — not that it is the same. And the numbers are approximations not exact details, also considering that each token's dominance stays constant. And this does not predict market activity or market behaviour at all.

What this section touches:

- How does Setheum's locking vesting schedule affect its growth and long-term viability?
- How does Setheum's vesting lockup predict the minimum on growth in the Setheum economy?
- What the Tokens in Setheum would be worth 3 years from now, price and market cap of each Setheum Currency?
- What are the Potential profitability and growth metrics for the Setheum Economy?

So, according to the scarcity principle, "the price of a good, which has low supply and high demand, rises to meet the expected demand",therefore, the tokens that have low supply and an increasing demand based on the circulating supplies and locked supplies, will increase in price relative to the demand.

Considering the table below, the supply of the T1(Tier-1 / non-stablecoins) Tokens is approximately 11% of the economy which is equivalent to $1Billion approximately, and approx. 6.6% off the top is locked leaving only approx. 4.4% unlocked.

The supply of T2-Tokens/stablecoins (which is the "demand of T1 tokens") is a staggering approx. 88% of the economy, and approx. 41% off the top is locked, therefore approximately 52% of the economy is unlocked (that is 11.8x more demand than supply).

And for the locked amount that will be unlocked in the coming 3 years, that will be 48% of today's economy, that is approx. $4.4 Billion locked (which is approx. 10.9x more demand than supply).

Therefore, the demand is expected to rise to an average of 22.7x, that is 2,270% up in the next 3 years based on these metrics (considering my disclaimer, and also not considering the trading on DEX and other obvious methods that inflate or deflate the supply and/or increase or decrease the demand, and this only takes into consideration the prediction of the T1 Tokens / Non-Stablecoins relative to the demand-supply curve dependent on TVL and stablecoins for price formation).

Here is the Ultimate Metrics Table, **"blue highlight"** indicates **"TVL (Total Value Locked)"** metrics, **"yellow highlight"** indicates **"Current"** metrics, while **"green highlights"** indicate **"Future/Predicted"** metrics:

Setheum Currencies Price and Market Cap Prediction by 2025

:Metrics: (Approx.)	SETM	SERP	DNAR	HELP
TVL of Total Supply in DEX (Approx.)	20%	30%	30%	30%
TVL of Total Supply in Staking (Approx.)	0.0009%	NIL	NIL	NIL
TVL of Total Supply in Vesting (Approx.)	32.5%	33.8%	33.8%	33.8%
TVL in Total Supply (Approx.)	52.5%	63.8%	63.8%	63.8%
TVL in Total Economy (Approx.)	1.8%	0.9%	0.6%	3.3%
Total Supply (Approx.)	31.3Billion SETM	2.58Billion SERP	700Million DNAR	700Billion HELP
Domination % in Total Economy (Approx.)	3.4%	1.4%	1%	5.3%
Market Price (Approx.)	$0.01	$0.05	$0.14	$0.0007
Predicted Average Market Price (By 2025) (Approx.)	$0.227 (2,270%💹)(22.7X💹)	$1.135 (2,270%💹)(22.7X💹)	$3.178 (2,270%💹)(22.7X💹)	$0.01589 (2,270%💹)(22.7X💹)
Current Market Cap	$313,3Million	$129Million	$98Million	$490Million
Predicted Average Market Cap (By 2025) (Approx.)	$7.1Billion	$2.9Billion	$2.2Billion	$11.1Billion
Current Total Economy Market Cap (Approx.) [$4.6Billion]	<<<<<<<<	<<<<<<<<	<<<<<<<<	<<<<<<<<
Predicted Average Economy Market Cap (By 2025) (Approx.) [$78.4Billion] (2,270%💹)(22.7X💹)	<<<<<<<<<	<<<<<<<<<	<<<<<<<<<	<<<<<<<<<

Built-In Exchange (SetSwap - DEX)

[SetSwap - SEtheum DEX]

Inspired by Uniswap V2, Setheum has a built-in Decentralised Exchange that I like to call "**SetSwap**" (or **Set**heum**Swap**). In SetSwap there is what I call the EFE (Exchange Fee Evaluator) that is the first of its kind and unique to Setheum (one of the Setheum originals).

The EFE essentially lets available two types of Exchange fees, one for Tier-2 paired pools (LPs paired with at least one Setheum stablecurrency for example "BTC_SETUSD_LP"), then another fee structure for every other pool that is not a "T2-Paired-LP" on the DEX. Speaking of which, our user-friendly Mobile Wallet will be available soon where you could access Setheum's DeFi features with a more beginner-friendly UI.

Exchange Fee Evaluator (EFE)

The EFE structure takes less fees from traders that swap with a "T2-Paired-LP" than it takes from a "non-T2-Paired-LP" (i.e. "BTC_DNAR_LP"). The difference between these fees is then paid to the pool by the SERP by issuing the T2-token to the pool to balance out the full Exchange Fee. This lets the traders pay less fees while the Liquidity Providers earn more.

This in turn attracts more traders, more trading volume, more liquidity, more market attractiveness, more trading opportunities and more natural economic growth based on market drive and demand, which in turn props the market value of the Serp and the Dinar and the entire Setheum tokens which in turn improves overall market performance and economic growth.

The initial Exchange Fees are as such, exchange fee is 0.3%, stablecurrency exchange fee is 0.1%, and the EFE (effect/difference) is 0.2%. They can be updated with governance through runtime upgrades.

HighEnd LaunchPad (HELP) Protocol

Crowdfunding LaunchPad on Setheum

[HighEnd LaunchPad - HELP Protocol]

Teams and projects that are building smart contracts and dapps on the SEVM would need to raise funds and even bootstrap their tokens on the SetSwap. They need community backing by liquidity providers and the crowd so that they could have a strong start and a high-end launch by creating a crowdfunding campaign that ends with their ERC20 Tokens getting sold to the public and bootstrapped on the DEX through a crowdfunding IDO. I happen to be working on that in Setheum, providing the High-End LaunchPad (HELP) Protocol to do just that for the projects building/deploying their tokens on Setheum's SEVM as ERC20 start contracts.

The HELP Protocol has a token of its own called the "High-End LaunchPad - HELP" token, which serves as a utility token for the High-End Protocol. The token is used as a "Submission Deposit" which will be locked in the protocol by the Campaign creator to propose a LaunchPad Campaign until the Campaign is closed, then the HELP tokens are returned to the creator after the project is closed (successful or not).
There are four participants in a High-End LaunchPad, the Campaign Creator, the LaunchPool Liquidity Providers, the Crowdfunding Contributors, and the HighEnd Council.

- **HighEnd Council:** Approves or Rejects a Campaign;
- **LaunchPool Liquidity Providers:** Provide Liquidity that is used to Bootstrap the Campaign tokens liquidity pool on the SetSwap DEX, making it tradable on the SetSwap.
- **Campaign Creator:** The person/team that creates/proposes a new Crowdfunding Campaign, the beneficiary of the raise.

How the HighEnd LaunchPad Works

The HighEnd LaunchPad Protocol lets teams/projects/campaigns achieve two (2) goals at once, it raises money via crowdfunding, and if the crowdfunding campaign is successful then the protocol bootstraps the campaign's ERC20 token into the SetSwap DEX for the public to trade.

The protocol lets the Campaign Creator choose which currency to pair their tokens to for the bootstrap listing which is also the currency that is to be raised in the crowdfunding campaign. Campaign Creators could choose between the Setheum Currencies (**SETM, SERP, DNAR, HELP, SETR, SETUSD**), and more could be added with a runtime upgrade.

There is a minimum raise that must be made and that is the softcap, it is required by the protocol and set by the HighEnd Council. The HardCap (Goal) is then set by the Campaign Creator, and the Period (campaign period - amount of blocks a campaign should stay active) is also set by the Campaign Creator.

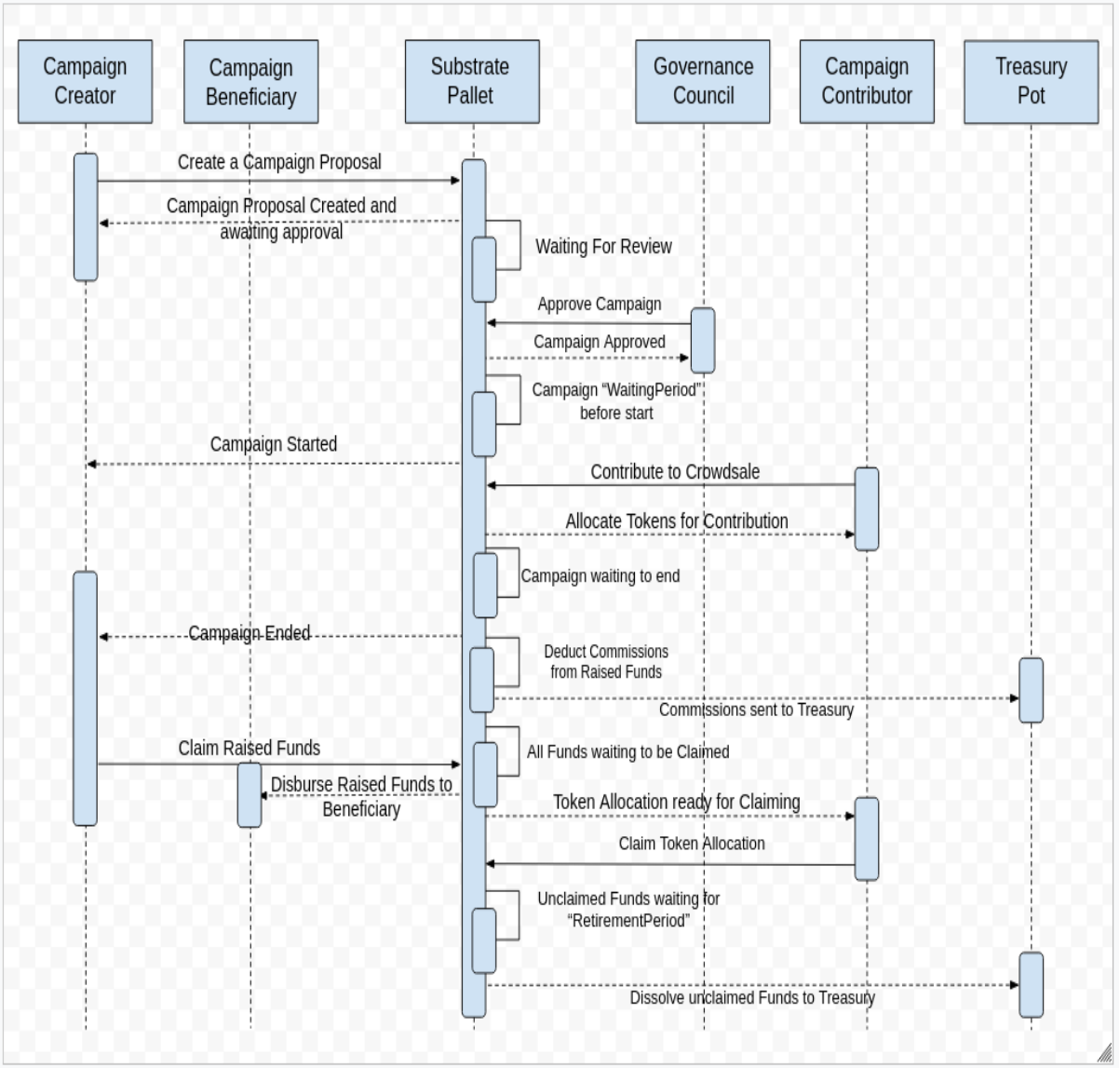
The Lifecycle of a HELP Campaign

A HighEnd LaunchPad Campaign has three stages in its lifecycle, they are as follows:

1. **Proposal stage:** The first stage is the Proposal stage where a Campaign Creator creates a proposal that proposes to the HighEnd Council to start a HELP Campaign. At this stage, the creator submits a proposal with a ***SubmissionDeposit*** that is locked/reserved from the creator's free-balance (account) into the creator's reserved-balance whereby they cannot touch/transfer these funds.
   This will be unlocked immediately if the proposal is rejected, if the proposal passes this will stay locked until the Campaign closes (successful end or not). And in this stage the ERC20 token allocations provided by the creator for the LaunchPool (Bootstrap initial DEX Liquidity) and for the Crowdsales are also locked/reserved in the creator's reserved account, reserved until when the Campaign Closes.
2. **Waiting stage:** The second stage is the Waiting stage where every Approved Campaign is set to wait for a specified period of time before it is automatically started.
3. **Active Stage:** The third and final stage is the Active stage where every Approved Campaign that has finished its WaitingPeriod is set to go active and start the crowdfunding/crowdsales event. At this stage, if a campaign fails, it is closed and raised funds are refunded to contributors as well as the Campaign allocated ERC20 tokens are also unlocked from the account of the creator. If the campaign closes successfully then the reserved ERC20 Funds are slashed from the reserved account of the creator and distributed/transferred to the beneficiaries (crowdsales contributors, and LaunchPool for DEX Bootstrap liquidity).

After a successful Campaign, the Commissions are all taken from the Raised amount and the `LaunchPoolCommission` is transferred to the `LaunchPool` that sponsors the Bootstrap of the Campaign. Then the `BuyBackCommission` is used to buy back and burn the HELP token. Then the `QMAFlashloanCommission` is used to fund the `QMAFlashloanPool` for the public to enjoy Setheum's built-in on-chain free and Halal FlashLoans. All Unclaimed funds (either raised or allocated) will be dissolved to the `FlashPool` (denoted in the figure below as Treasury) after the `RetirementPeriod` is reached.

A Sample Sequence Diagram of the LaunchPad Crowdsale pallet (initial framework design)



[Launchpad Crowdsales Sequence Diagram]

Qurud Mudarabah Assari`ah (QMA) Protocol

[QMA Flashloans - Setheum FlashLoans - Qurud Mudarabah Assaree'ah]

Halal Flashloans on Setheum QMA

It was a cold winter night, I just had supper and finished reading about the then recent crypto bull run, and it was all exciting—more like fomo plus excitement. That feeling is refreshing as well as a bit disturbing, if you know you know. That night, and that entire day, I had read a lot as well as watched a lot of YouTube, for what you say, well, it all has to do with something they call Flashloan.

This Flashloan thing kept me awake for days even, as it ate through my mind thinking of all sorts of possible trades I could perform and profit in a flashloan. It turned out to be a bit harder than I thought, it was 2020 and I was so ** broke **, though I had big plans I also had big failures (I meant big lessons) that I learnt from. So I said over and over to myself, if I had a chance to make a million dollars in a blocktime and I made it how grateful will I be, the answer is an ocean load of it, so I said.

Fast forward now, I want to enable people like me to get access to these flashloans for free and halal just exactly as I would want it. If you were given the authority to specify your brain power or hearing power or seeing power, or endurance capacity, how far would you go, I would say "very far", as far as the authority goes, well, this is what I meant when I said "I want to enable people like me to get access to these flashloans for free and halal just exactly as I would want it.".

What is a Flashloan?

A flash loan **enables a Defi member to borrow cryptocurrency without requiring collateral**. The point is that the flash loans are encoded in a smart contract, which forces the user to return them in the same transaction that changes the user's account balances on the Ethereum blockchain.

Meant to be for developers, Flash Loans enable **easy instant one-block one-off borrowing of large sums of cryptocurrencies,** no collateral is needed, provided that the liquidity borrowed is returned to the flashloan pool all within one transaction/block. If it fails, the whole transaction is reversed to effectively undo the actions executed, therefore, eliminating risks of loss from the pool.

In Setheum, flashloans are encoded in a Virtual Machine Environment called the “FVM - Flashloan Virtual Machine” which keeps the loan in an encapsulated environment safe from the user and forces the user to return the loan in the same transaction. An unprofitable flashloan trade will fail such that the entire flashloan will not be affected and the capital in the flashpool is safe. Flash loans are entirely risk-free, the borrower/user just pays the network transaction fee and gets the flashloan with no need for a collateral.

What is QMU (Qurud Mudarabah Assaree’ah)?

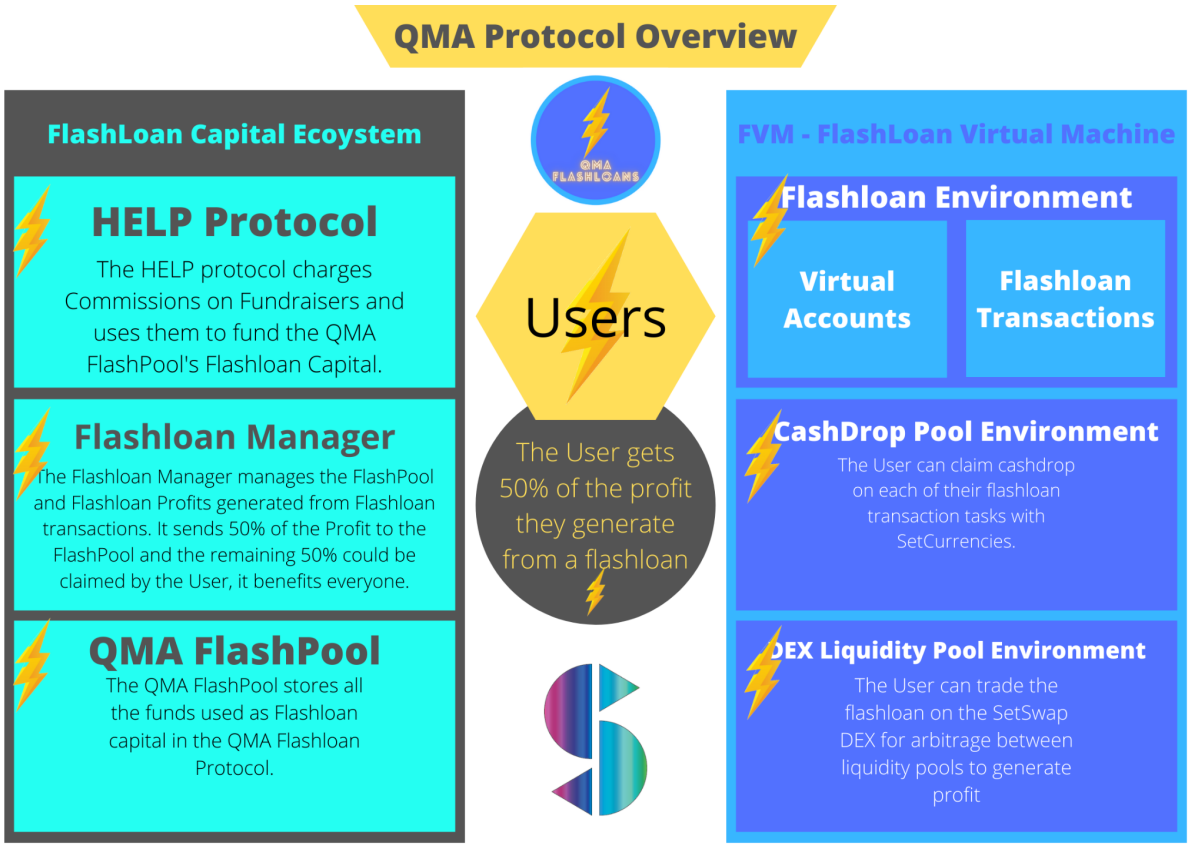
QMU meaning “Qurud Mudarabah Assaree’ah” in english essentially means “Profit-Sharing FlashLoans”, with “Qurud” meaning “Loans” and “Assaree’ah” meaning “Quick” or “Flash”, “***Mudarabah***” is a partnership where one party provides the capital while the other provides labour and both share the profits.

So what does ***Mudarabah*** have to do with **Flashloans** in **QMA** (Qurud Mudarabah As-Sari’ah)[Assari’ah could be spelled in a couple of ways, get used to them]?

Well, QMA simply combines the features of a Mudarabah with the functions of a Flashloan, as easy as that, but harder to implement right.

More on this protocol will be introduced later as the protocol is still in early stages of development, like `FlashLoanLimit` parameters to limit the amount allocated to an account per flashloan made so as to let multiple flashloans take place from distinct users all across the world.
But basically, the only limit to how many FlashloanTransactions a user could make would be the BlockSizeLimit, that is - meaning that if the block gets full based on the weight given to the flashloan transactions because transactions in Setheum are measured in Weights and charge `microFees` (very low fees).

The QMA is simplified in the Illustration below:



Literally and simply, when a flashloan is successful, by the way - flashloans don't complete if they are not profitable therefore there is no chance for loss of the capital in the pool, only the user loses transaction fees (BTW these fees could range from a few cents to a few dollars, i.e. $0.5 - $12) if the flashloan is not profitable/successful. We could set the `PoolProfitMargin` at 50% (meaning - half of the profit gained from a flashloan goes back into the FlashPool for more Flashloan capital).
These parameters could be updated via Governance extrinsics or with a runtime upgrade by the Chain Governance Council.

Al-Ethaar Protocol

Quadratic Altruism on Setheum

Setheum is made for altruism, for the public, for helping the poor and the needy, for securing the planet and funding causes we care about. Some of those causes include feeding the hungry, quenching the thirsty, clothing the unclothed, housing the unsheltered, medicating to the sick, protecting the unprotected, financing the poor, voicing the unvoiced, helping the afflicted, warming the freezing, and cooling the hot.

To do just the purpose of Setheum, we have to empowr the unempowered and support the unsupported by funding the unfunded through transparently governed algorithmic crowdfunding mechanisms that radically raises funds for only this purpose, for Al-Ethaar—an arabic word meaning Radical Altruism. The main purpose of Setheum is Al-Ethaar, to essentially, thoroughly, radically and altruistically be a gift from me to all of the entirety of Creation, both human and non-human, both animate and inanimate, both celestial and earthly.

What is Quadratic Altruism?

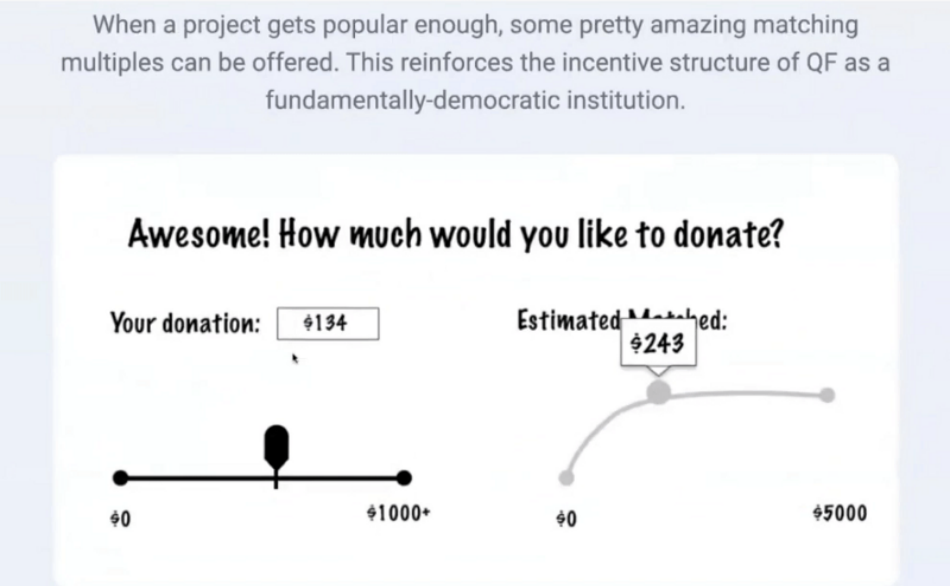
$$V_i^p \left(\left(\sum_j \sqrt{c_j^p} \right)^2 \right) - c_i^p.$$

[Quadratic Funding Formula.]

First and foremost, what is Altruism or Al-Ethaar (in Ara bic).. Altruism is derived from the French altruisme, and its etymology can be traced back to the Italian and earlier Latin alter, meaning other, others. Altruism is a selfless act of thinking about the welfare of others. In moral judgement, the happiness of others is more important than one's own.
Altruism is a virtue in many ideas and cultures. In evolutionary genetics, altruistic behaviour is defined as increasing the survival of others and decreasing the survival of one's own.
From the term “Quadratic Funding”, the term “Quadratic Altruism” is Quadratic Funding that focuses on Humanitarian Altruistic missions and campaigns that support altruistic causes like those mentioned above. The concept of Quadratic Funding extends ideas from Quadratic Voting to a funding mechanism for endogenous community formation as exemplified by Vitalik Buterin, Glen Weyl and Zoe Hitzig in their paper on Quadratic Funding.

Design and Analysis of Quadratic Altruism

Referred to as the “Liberal Radical” (LR) mechanism by Vitalik Buterin, Glen Weyl and Zoe Hitzig in their paper on Quadratic Funding.



The Liberal Radical Mechanism $\Phi^{LR}(c_i^p)$ generates funding F^P for each good $p \in P$ such that $F^p = \left(\sum_i \sqrt{c_i^p}\right)^2$.
Any positive contribution must satisfy

$$\frac{2V_i^{p\prime}(F^p)\left(\sum_j \sqrt{c_j^p}\right)}{2\sqrt{c_i^p}} = 1 \leftrightarrow V_i^{p\prime}(F^p) = \frac{\sqrt{c_i^p}}{\sum_j \sqrt{c_j^p}}$$

by differentiation.

To alternatively vocalise the maths, the matched_amounts (amounts each funding_campaign/project gets from a matching_pool/round) are calculated by the CLR formula

$$V_i^p\left(\left(\sum_j \sqrt{c_j^p}\right)^2\right) - c_i^p.$$

[Quadratic Funding Algorithm—Constrained Liberal Radicalism algorithm | CLR Formula]

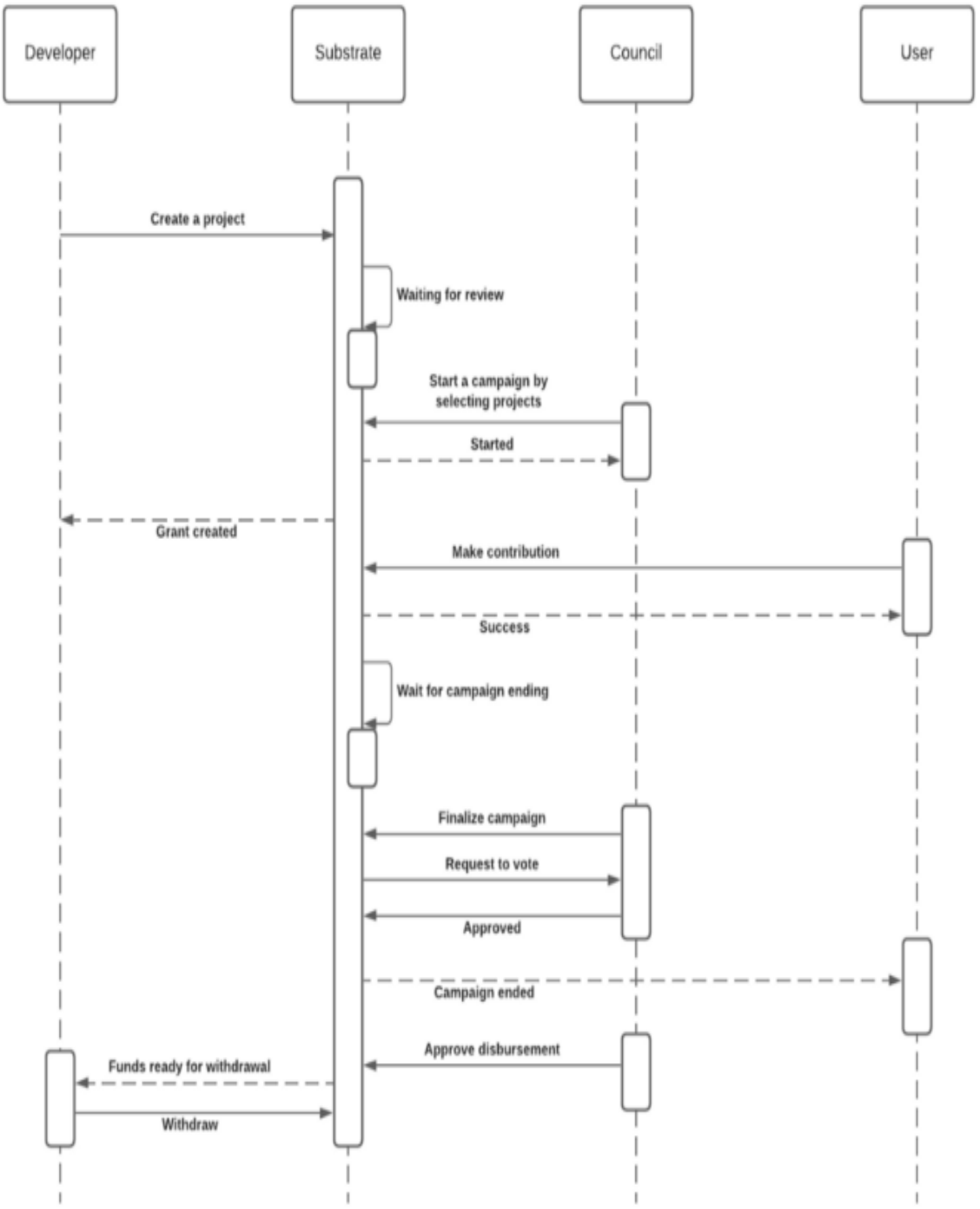
where, the total amount received by a project (matched_amount) is proportional to the square of the sum of the square-roots of the contributions that are received.

$10,000 Matching Pool

$V_i^p\left(\left(\sum_j \sqrt{c_j^p}\right)^2\right) - c_i^p.$	**Project X**	**Project Y**	**Project Z**
Funding	$1,000	$1,000	$1,000
Number of Contributors	5 ($200 each)	2 ($500 each)	20 ($50 each)
Matched Amount	$1,851.85	$740.74	$7,407.41
% of Initial Amount	~185%	~74%	~740%

Therefore no participating project campaign will exit with nothing, they all share the funds in the pool and come together for the good of each other, this essentially is al-ethaar (true altruism). Therefore, every contribution matters as well as every project matters, even the smallest of projects and the smallest of contributions. The inventors did a great thought here, kudos, and we shall implement it in Setheum Insha'Allah.

To simplify the module, the user flow of the QF campaign based on the Constrained Liberal Radicalism algorithm(CLR) is demonstrated with the sequence diagram below.


Developer
Substrate
Council
User
Create a project
Waiting for review
Start a campaign by selecting projects
Started
Grant created
Make contribution
Success
Wait for campaign ending
Finalize campaign
Request to vote
Approved
Campaign ended
Approve disbursement
Funds ready for withdrawal
Withdraw

Governance

Governance is the way rules, norms and actions are structured, sustained, regulated and held accountable. Setheum has a multicameral governance system with several avenues/chambers to pass proposals. Decisions in Setheum are enacted on-chain and are autonomous & binding. Setheum has various on-chain, governance chambers.

The primary chamber is “the Shura Council”, it comprises a set of accounts. There is a Technical Committee for deciding on technical governance (e.g. runtime upgrades), and other councils explained below. There will be 3 Chambers / Councils of the Setheum Government, as follows:

1. **Shura Council:** General governance like approving runtime upgrades, it is basically the General Council.
2. **Technical Committee:** They will be in charge of the governance of the Technical aspects of the Network like bug fixes and maintaining open source projects for example.
3. **Financial Council:** They will be responsible for governing the Financial Sector of the Network, DEX financial governance, Multiple Oracle registrations, SERP inflation rates, buybacks and CashDrop rates et al., for example.

Consensus

Setheum’s finality protocol for consensus is the very healthy GRANDPA consensus mechanism. GRANDPA (GHOST-based Recursive Ancestor Deriving Prefix Agreement) finalises blocks based on availability and validity checks that are done as the proposed chain grows. The finality is expected to be very fast. Setheum uses BABE for block authoring and GRANDPA for finality. And Setheum uses the NPoS staking consensus protocol.

Specification Sheet

Key	Value
Currencies (symbol = decimals, index)	SETM = 18, 0; SERP= 18, 1; DNAR = 18, 2; HELP = 18, 3; SETR = 18, 4; SETUSD = 18, 5;
Native Token (symbol = decimals, index)	SETM = 18, 0;
SS58 Prefix	25
EVM chain_id	25888
ERC20 Contracts - Predeployed Contracts	SETM: "0x0000000000000000000100000000000000000000"; SERP: "0x0000000000000000000100000000000000000001"; DNAR: "0x0000000000000000000100000000000000000002"; HELP: "0x0000000000000000000100000000000000000003"; SETR: "0x0000000000000000000100000000000000000004"; SETUSD: "0x0000000000000000000100000000000000000005"; LP_SETM_SETUSD: "0x0000000000000000000400000000000000000005"; LP_SERP_SETUSD: "0x0000000000000000000400000000020000000005";

	LP_DNAR_SETUSD: "0x0000000000000000000040000000030000000005"; LP_HELP_SETUSD: "0x0000000000000000000040000000030000000005"; LP_SETR_SETUSD: "0x0000000000000000000040000000040000000005"; Token: "0x0000000000000000000000000000000000000800"; StateRent: "0x0000000000000000000000000000000000000801"; Oracle: "0x0000000000000000000000000000000000000802"; Schedule: "0x0000000000000000000000000000000000000803"; DEX: "0x0000000000000000000000000000000000000804";
Block authoring	BABE
Finality	GRANDPA
BlockTime	6 seconds
BlockSize / `BlockLength`	1.25MB to 3.75MB
BlockHashCount	2400 (`4 hours`)

Staking, Nominating and Validating

Setheum uses a Nominated Proof-of-Stake(NPoS) consensus mechanism to secure the network. Nominators nominate validators to be in the active set of chain validators by staking their Setheum (SETM) with a validator/validators. Validators produce new blocks, validate existing blocks, and also guarantee finality. It is important to note, validators only earn SETM rewards if they have enough staked SETM to qualify into the active validators set. The active validators set updates every Era, which is `2hrs` on Setheum.

Therefore, Setheum uses NPoS to select validators from a small set, allowing even small token holders to nominate validators who run infrastructure while still claiming staking rewards without running their own node infrastructure. And so with Setheum able to stay alive even when most of the network goes offline, Setheum COULD be able to survive WWIII. **The Staking rewards range from a minimum of 2.58% to a maximum of 25.8%, ideal stake of 50%;** Setheum uses NPoS (Nominated Proof-of-Stake) as its mechanism for selecting the validator set. It is designed with the roles of validators and nominators, to maximise chain security. Actors who are interested in maintaining the network can run a validator node. At genesis.

Airdrops & Initial Airdrop Event (IAE)

Setheum's initial Token Offering will not be a traditional ICO, IEO or IDO. It will instead be an IAE, an Initial Airdrop Event that will take place on our Community Social Media outlets. In this event, we will give away some of the Initial Allocated Airdrop tokens as listed above in the Allocations tables, in an airdrop on Setheum to the participants of the IAE. As for more Airdrop Events, stay close by and keep your eyes open for Setheum Airdrops of that specific allocation.
There will be a referral program in each of the Airdrop Events. We will not require you to pay anything to join, it is absolutely free to join Airdrop Events. The DEX Offering will be done as a liquidity provision to the SetSwap (Setheum's built-in DEX), with SETUSD liquidity pairs. Users can buy the listed tokens (SETM, SERP, DNAR, HELP, SETR, SETUSD) on the SetSwap.

Beware of imposters, we will never ask for your private keys, or to send us funds, or contact you individually or send you DMs, and we will certainly not recommend that you use unknown and untrusted wallets.

So, keep in touch and wait for the IAE. We will announce it on our Social Media accounts. Follow us on the accounts on our website https://setheum.xyz

Conclusion

Setheum has a unique approach to the problems facing the space and provides opportunities that incentivize adoption and usability and most importantly because it helps people with a means to survive, thrive and get educated through its public fund (SPF). Setheum has amazing investment opportunities with astonishing usability. Setheum is the brainchild of a cluster of ideas and challenges that inspire the founding of it. And so with the expected level of equilibrium, security, decentralisation, scalability, efficiency, diversity and adoption, Setheum is set to implement the neom of finance in the Web3 Ecosystem extending hands to the halal consumer market and the Islamic Finance community.

Launching of the Setheum Protocols will take a Phased approach with most of the protocols launching in the ***Phase 1***, and the ***HELP Protocol + QMA Flashloans*** launching in the ***Phase X***, and the ***Al-Ethaar Protocol*** Launching in the ***Phase Y.***

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