

BloomBeans: A Peer-to-Peer Decentralized Global Financial System

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Abstract

A purely peer-to-peer version of a financial system can now be replicated using Blockchain technology removing the need for a centralized financial institution.

1. A base layer of currency, with a well structured monetary policy.
2. A decentralized version of all major financial products like: pensions, insurance, saving accounts, passive income and loans.
3. Decentralized markets for peer-to-peer trading of these products, along with offering and obtaining p2p loans, with products used as collateral.
4. A specialized financial blockchain infrastructure that allows financial decentralized applications (DAPPs) and further trading with non-decentralized financial instruments like equity, commodities, real estate participations, art tokenization, mortgages, centralized insurance, etc.

Replacing centralization and oversight with an automated system can lead to large-scale financial cost reductions. But most important, it can safeguard the populace against wealth extraction, mitigate economic imperialism and combat widespread corruption in both finance and politics.

These significant advantages create an inherent demand, justifying the system's monetary growth while ensuring the stability of currency value.

The system's fairness is guaranteed by its open-access, impartiality and immutable code laws.

By anchoring the financial system in mathematical principles rather than power dynamics, it will evolve from an abusive system built on money lending privileges, uncertainty, debt and consumption, to one that fosters savings, long-term vision, predictability and integrity.

1 - Introduction

Centralized political power seems more dominant than ever, but the reverse is true, it is weakening.

The rise of the internet and the sharing of networked information and knowledge are gradually diminishing the influence of corporate mass media. Modern interconnectivity is now eradicating traditional propaganda methods.

Similarly, decentralized finance is revolutionizing the global economy. Efforts to control cryptocurrencies are likely to be ineffective, as economies that don't embrace this technology will become outdated.

In the coming decades, we will see societies evolve from rigid, power-centric hierarchies to fluid, organic networks. The combined strength of a globally connected consciousness and a globally integrated financial system will surpass any centralized decision-making entity.

The cryptosphere exemplifies one of these self-organizing networks. It evolves like a living organism, code is shared openly by developers, and built upon to create an ever improving model, always more efficient, and always more secure. This is how decentralized blockchain will become unstoppable, ensuring the economy — the lifeblood of society — flows freely and without blockages.

BloomBeans was founded on January 18th, 2024 in this context. Its mission is to aid the crypto community in building a pathway for the global populace to transition away from the current feudal financial system to a vibrant and healthy world, enabling societies to thrive like never before.

2 – BloomBeans

BloomBeans is a decentralized blockchain ecosystem featuring its own currency, markets, and a suite of the most familiar financial products, all tailored to facilitate the ideal financial environment for a healthy economy.

Like any other financial system, it doesn't create wealth. However, it is the most secure, transparent, honest, streamlined and reliable financial system ever built, and it operates at just a fraction of the multi-trillion-dollar annual operational costs of our current financial system.

While Bitcoin introduced the world to a decentralized currency and acts primarily as a store of value, the BloomBeans project will usher in a holistic decentralized financial system.

3 – Currency

Overview: The official currency of the BloomBeans System is called BEAN.

Initial Supply: The system launches with an initial supply of 1,000,000 BEAN

Total Supply: A maximum of 21 Billion BEAN coins will ever be created. Reaching this cap will be a slow process spanning several centuries as the financial products minted by users continue to pay out rewards in BEAN currency.

Monetary Policy: The BloomBeans system starts with a 20% yearly Interest Rate. The higher the Interest Rate the bigger the financial product rewards. This currency growth, however, decreases each time a new milestone in the Total Amount of BEAN

coins is reached. Then, a new Period starts with an Interest Rate reduced by 0.5% (see Monetary Policy Table below).

Monetary Growth: The Interest Rate has been set in a way that balances three main aspects: long-term duration of the system, appealing returns, and currency value stability.

A high initial interest rate enables the financial system to experience rapid monetary expansion, effectively meeting the strong demand from new users. Then, in its mid to late stages the system expansion will slow down and be closer to natural economic growth.

Currency Stability: If users find value in the system and commit their assets for longer durations, the currency supply will rise more quickly and interest rates will drop faster. This decline in interest rates reduces BEAN rewards and the currency growth, resulting in a slower pace towards its 21 Billion coins.

The duration of the financial system rewards program is calculated to last for at least 200 years.

Currency Value: The key to maintaining and increasing the BEAN's value lies in the demand for the currency, which is driven by its numerous benefits compared to traditional finance (points 6 and 7).

Monetary Policy Table: The following table links the increasing Total Amount of Coins with the corresponding Interest Rate **R** which represents yearly interest of a product. For instance, if a Savings Account is created at period **0**, it will accumulate interest at an annual total of 20%, every year, throughout the product's lifetime.

PERIOD	MARKERS	INTEREST RATE
0	1.000.000	20,00%
1	2.200,000	19,50%
2	3.200,000	19,00%
3	3.700,000	18,50%
4	4.200,000	18,00%
5	4.700,000	17,50%
6	5.000,000	17,00%
7	5.300,000	16,50%
8	5.600,000	16,00%
9	5.900,000	15,50%
10	6.200,000	15,00%
11	6.700,000	14,50%
12	7.500,000	14,00%
13	8.300,000	13,50%
14	9.100,000	13,00%
15	10.000,000	12,50%
16	11.000,000	12,00%

17	12,000,000	11,50%
18	13,000,000	11,00%
19	14,000,000	10,50%
20	15,000,000	10,00%
21	17,000,000	9,50%
22	19,000,000	9,00%
23	21,000,000	8,50%
24	25,000,000	8,00%
25	31,000,000	7,50%
26	40,000,000	7,00%
27	50,000,000	6,50%
28	70,000,000	6,00%
29	120,000,000	5,50%
30	200,000,000	5,00%
31	300,000,000	4,50%
32	400,000,000	4,00%
33	900,000,000	3,50%
34	1,500,000,000	3,00%
35	2,500,000,000	2,50%
36	3,500,000,000	2,00%
37	5,500,000,000	1,50%
38	7,500,000,000	1,00%
39	12,500,000,000	0,50%
40	21,000,000,000	0,00%

4 - Crypto Financial Assets

Overview: CFAs are a pioneering class of digital assets, merging the digital ownership features of non-fungible tokens (NFTs) with the wealth management capabilities of financial instruments.

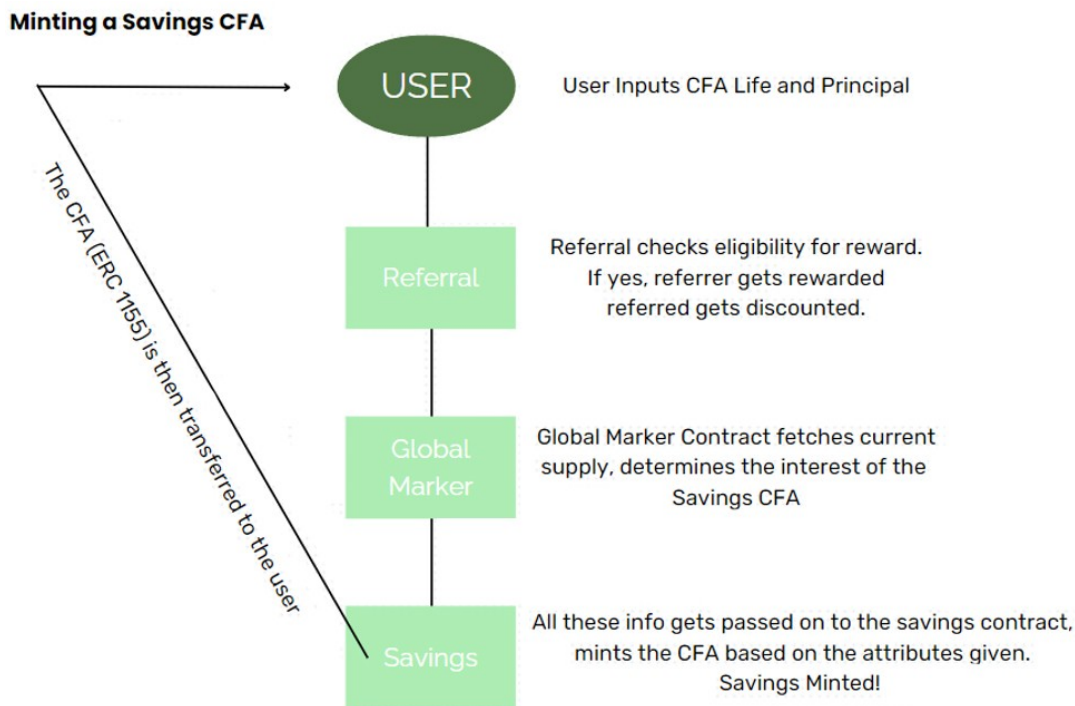
These instruments are similar to bonds or shares, they can be exchanged, used as collateral for a loan or simply used to obtain profits, just like any other financial product.

Product Families:

- Pension
- Income Stream
- Savings Accounts
- Insurances
- Loans

CFA customization: CFAs can be personalized by modifying different properties such as the Product Type, Principal Amount, Product Life Period, Payment Period, and more. For corporate or institutional use, CFAs can also be created in bulk, with up to thousands of products being minted in a matter of seconds.

Minting: Once the product properties and the amount of Principal BEAN to be invested are defined, the user can press the MINT button. This action prompts the connected crypto wallet to appear, allowing the user to confirm the transaction. Upon confirmation, the CFA is created.

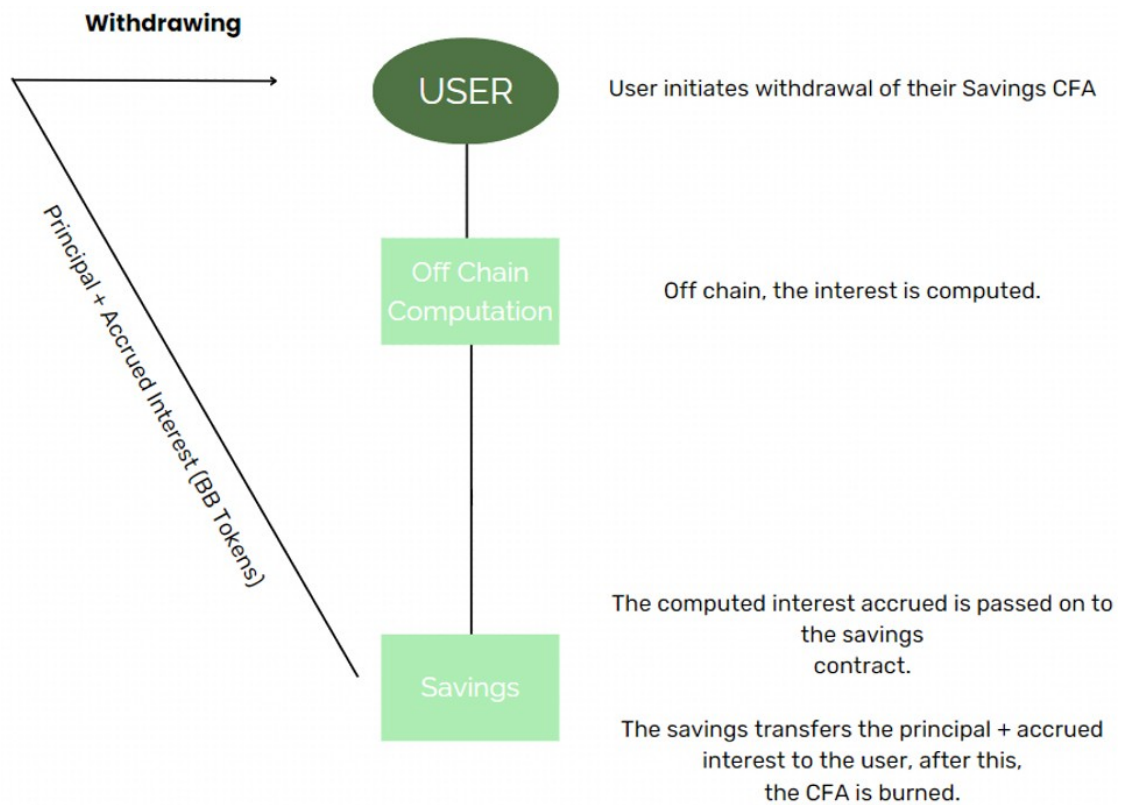


Pool: Upon minting a CFA, the BEAN invested is blocked and all coins due as payment are created and placed in the Pool. These coins are released to the CFA holder when the time is due. This method ensures every CFA will always be able to pay its scheduled amount of BEAN.

Total Amount of Coins: This number comprises every BEAN in the pool, along with all BEAN held by users and all BEAN available on the market.

The system keeps complete accountancy of the coins created and sets the Interest Rate, reducing it by 0,5 every time a new milestone in the Total Amount of BEAN is reached (see Monetary Policy Table).

Withdrawing Profits: The characteristics and evolution of every CFA product can be visualized in the BloomBeans’ Financial Garden. Upon maturing, users can proceed to claim profits. All profits are paid in BEAN currency.



5 – Products

On the introductory version of the BloomBeans financial system, we offer 10 CFA products across 5 product families, all built upon the principle of Interest.

- 5.1. Savings Account: Interest-compounding
- 5.2. Locked Savings Account: Interest-compounding
- 5.3. Income Stream: Interest-awarding
- 5.4. Pension: Interest-compounding + interest-awarding
- 5.5. Insurance 10y: Full access, 3 interest-compounding steps
- 5.6. Insurance 5y : Full access, 6 interest-compounding steps
- 5.7. Insurance 2y : Full access, 15 interest-compounding steps
- 5.8. Insurance 1y : Full access, 30 interest-compounding steps
- 5.9. Insurance 3m : Full access, 120 interest-compounding steps
- 5.10. Loan: Halts interest

5.1 SAVINGS ACCOUNT

A decentralized version of the popular Savings Account banking product. This CFA is designed to accrue compound interest monthly on the Principal Amount for up to 30 years.

$$PX = P \times (1 + r)^{12n}$$

Where:

- **PX** is the compounded principal at the end of the product life.
- **P** is the principal amount of BEAN.
- **r** is the monthly interest rate (the 12th root of Interest Rate)
- **n** is the number of years.
- The term **(1+r)¹²ⁿ** represents the compound interest factor, accounting for monthly compounding over a period of n years.

It's important to note that during the chosen period, withdrawing profits in BEAN currency is not allowed. However, the Savings Account CFA can be traded or utilized as collateral when securing a Loan.

5.2 LOCKED SAVINGS ACCOUNT

Users can choose how many X to make on the Principal **P** investment from x2 to x200. The system provides the user with the number of months **n** required to reach a desired X depending on the Interest Rate period the system is in.

A Locked Savings Account offers higher returns compared to a regular Savings Account. Profits cannot be accessed, as they remain locked for the whole product's Life Period. Additionally, this product can't be sold or used as collateral for a Loan.

The following table shows the number of months needed to achieve the desired X on the Principal for each Period. Locked Savings Accounts are only available until Interest Rate Period 19.

PERIOD	x2	x3	x5	x10	x15	x20	x25	x50	x75	x100	x150	x200
0	40	62	91	131	153	170	182	221	244	260	283	300
1	41	64	93	134	157	174	186	226	250	266	290	306
2	42	66	96	137	161	178	191	232	256	273	297	314
3	43	68	99	140	165	182	196	238	262	279	304	322
4	44	70	102	144	169	187	201	244	269	287	312	330

5	45	72	105	148	173	192	206	250	276	294	320	338
6	46	74	108	152	178	197	211	257	283	302	329	347
7	47	76	111	156	183	202	217	264	291	311	338	357
8	48	78	114	160	188	208	224	272	300	320	348	
9	50	80	117	165	194	214	230	280	309	329	358	
10	52	82	120	170	200	221	237	288	318	339		
11	54	84	123	175	206	228	245	298	328	350		
12	56	87	127	181	213	236	253	308	339			
13	58	90	131	188	220	244	262	318	351			
14	60	93	136	194	228	253	271	330				
15	62	96	141	202	237	262	282	342				
16	64	100	147	209	246	272	293	356				
17	66	104	153	218	256	284	305					
18	69	109	159	227	267	296	318					
19	72	114	166	238	279	309	332					

5.3 INCOME STREAM

Income Stream is an Interest-awarding product replicating a passive income producing asset like shares, bonds or rental property. Interest is released periodically and duration is from 1 year up to 50 years.

The Principal is returned at the end of the product's Life Period. The CFA can be traded and the principal invested can be used as collateral for a Loan.

$$I = P \times \left((1 + r \times (1 + d)^{n-1})^A - 1 \right)$$

Where:

- **I** represents the interest payment received every **A** months.
- **P** is the principal amount.
- **r** is the monthly interest rate (the 12th root of Interest Rate)
- **A** is the number of months after which interest is paid out (1, 2, 3, 4, 6, or 12 months).
- **n** is the product Life Period, chosen between 1 and 50 years.
- **d** is the decrease-rate, set at -0.3%, applied for each additional year of income received.

5.4 PENSION

The BloomBeans decentralized Pension is a product that allows users to receive periodic profits derived from a compounded principal. The lifespan of this product can extend up to 60 years.

It combines an Interest-compounding period lasting up to 15 years, and a Interest-awarding period lasting up to 45 years. Both periods utilize the Interest Rate set at the time the product is created.

At the end of the Life Period, users are returned their compounded principal PX. The CFA can be traded or used as collateral for a Loan.

Period 1. Interest-compounding:

$$PX = P \times (1 + r)^{12n_1}$$

Where:

- **PX** = the compounded principal.
- **P** = Principal amount
- **r** = Monthly interest rate (the 12th root of Interest Rate)
- **n1** = Number of years chosen for the principal to compound (from 1 to 20)
- **(1+r)¹²ⁿ¹** represents the compounding effect over the months for n1 years

Period 2. Interest-awarding:

$$I = PX \times \left((1 + (r \times (1 + d)^{n_2 - 1}))^A - 1 \right)$$

Where:

- **PX** = the compounded principal from Period 1
- **r** = Monthly interest rate (the 12th root of Interest Rate)
- **d** = Decrease rate per year of income received. Set at -0.003
- **n2** = Number of years chosen for receiving the linear income stream (1 to 50)
- **A** = The interval at which the income is received (every 1, 2, 3, 4, 6, or 12 months)

INSURANCE

BloomBeans represents a unique solution for a fully decentralized insurance. It

incentivizes users to retain their investment for an extended period and withdraw funds only when absolutely necessary.

Complete Access to Funds: Through an Insurance CFA, users enjoy total freedom over their capital. They can withdraw any amount of BEAN, at any time and as frequently as they wish, from both the principal amount invested and any accrued compound profits.

Incentivizing Minimal Withdrawals: The product is designed to motivate users to leave their BEAN untouched. By maintaining their investment, users benefit from continuous compounding over a 30-year period, resulting in exponential rewards.

No Reinvestment: While users have the freedom to withdraw funds at any time, it is not possible to reinvest additional amounts. Only the remaining BEAN will continue to compound until the fixed Insurance Life period of 30-year concludes.

Diverse Options for Compounding: The Insurance product family offers five different levels of Interest-compounding, based on the user's commitment. The frequency of compounding and the amount of interest granted varies, impacting on the potential profit.

Formulation:

- **Y** represents the interest accrued in each period.
- **r** is the monthly interest rate, calculated as the 12th root of the annual interest rate, applicable at the time the Insurance CFA is established.
- **P** indicates the principal amount invested.
- **PX** represents the maximum profit achievable, assuming no funds are withdrawn during the investment period.

5.5 INSURANCE 10Y

The 10-Year Insurance implies the highest level of commitment. 10 years have to pass in order for the investment to compound, yet it promises the most substantial returns.

Structure:

Total number of compounding intervals is 3.

Frequency is once every 10 years.

The interest applied to the remaining principal at each interval is calculated as:

$$Y = 2.7^{120r}$$

The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3$$

5.6 INSURANCE 5Y

Total number of compounding intervals is 6.

Frequency is once every 5 years.

The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.78^{90r}$$

The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \times Y_4 \times Y_5 \times Y_6$$

5.7 INSURANCE 2Y

Total number of compounding intervals is 15.

Frequency is once every 2 years.

The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.32^{60r}$$

The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{15}$$

5.8 INSURANCE 1Y

Total number of compounding intervals is 30.

Frequency is once every 1 years.

The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.25^{30r}$$

The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{30}$$

5.11 INSURANCE 3M

This Insurance implies the lowest level of commitment. Users have to wait the shortest

time before the principal invested starts compounding. It also offers the lowest profit. Total number of compounding intervals is 120. Frequency is once every 3 months. The interest applied to the remaining principal at each interval is calculated as:

$$Y = 1.10^{10r}$$

The maximum profit that can be reached is determined by:

$$PX = P \times Y_1 \times Y_2 \times Y_3 \dots \times Y_{120}$$

5.10 INTEREST FREE LOANS

The BloomBeans Loan System represents an outstanding financial innovation. It offers users liquidity with the advantage of zero interest, complete flexibility on repayment, and full ownership over the collateral used to secure the Loan.

A Loan can be secured using any CFA as collateral. Interest generation is paused until the Loan is fully settled. Although the collateral CFA remains 'frozen', it can still be traded just like any other CFA product.

Key features of the System Loan include:

CFAs as Collateral: System Loans are accessible only by using any BloomBeans Crypto Financial Asset as collateral. These Loans are distributed in BEAN currency only.

Loan Value: Borrowers receive an automatic Loan amounting to 25% of the Principal and the Interest already compounded on their CFA.

Interest-Free Terms: There is no interest charged on these Loans. Borrowers are required to repay only the quantity of the Loan.

Flexible Repayment: The Loan can be repaid at any point without any time constraints or additional fees. However, the repayment must cover the full amount that was originally credited.

Collateral Handling: During the Loan period, the CFA is frozen and non-operational. Once the Loan is fully repaid, the CFA is unfrozen and resumes its standard functionality.

Tradeability: Just like the other CFAs, Loan products are owned by the user and are fully tradable.

6 - The Economic Benefits

A fully decentralized, immutable and streamlined financial system provides significant benefits compared to the cumbersome system that currently exists.

Minimal running expenses: Between 70% and 90% of financial corporations' profits are allocated to cover operational expenses. BloomBeans eliminates the need for middlemen, operators, security, bureaucracy and huge buildings.

In BloomBeans, all those expenses, which amount to tens of trillions of dollars annually, become users' profit.

Ownership: Direct asset ownership is a compelling proposal. Decentralized blockchain allows for independent control and protection of assets, eliminating third-party intervention, mismanagement or abuse.

Billions of new users: With just an internet connection over 3 billion people outside the financial system can now gain access to cutting-edge financial products and improve their lives and their society's economy.

Honesty: By establishing immutable and universal rules we can reduce corruption and manipulation, fostering trust and eliminating costly security bureaucracies.

Capital democratization: Decentralization of capital ownership will foster a new wave of innovative investment ideas, free from the constraints of credit, debt, or reliance on banks.

7 - The Social Benefits

Empowering the Real Economy: Financial structures have expanded to such an extent that they negatively affect many aspects of the real productive economy through control and manipulation. These structures must downsize and evolve into simpler and more useful tools.

With an streamlined and decentralized system, we can bring stability and independence to the real economy, empowering workers, industry, and services.

Proper Incentive structure: BloomBeans savings-based system generates a socio-economic incentive structure that fosters delayed gratification, long-term thinking and direct asset ownership. Values that have demonstrably led to long-term prosperity.

Privacy, a basic Human Right: No authority has the right to spy on you, control your financial activities, or impose restrictive laws, even in the name of your safety or the "common good". Decentralized blockchain technology restores this fundamental human right to financial privacy.

Voluntarism: In the BloomBeans system, wealth cannot be forcibly extracted by any

authority. Empowering individuals and entrusting them with the responsibility to supervise infrastructure maintenance and public institutions will lead society toward a more mature and sovereign citizenry.

Resilience to Imperialism: Today, governments can forcibly extract wealth, indebt populations, impose economic sanctions, and dictate policies. These tools are utilized by both local and foreign powers to effectively control population's wealth. BloomBeans puts an end to this, drastically increasing the resilience of people and institutions against financial Imperialism.

8 - Blockchain details

Contracts Used: The Ethereum blockchain serves as the initial foundation for the first iteration of the BloomBeans system.

The BEAN currency is deployed as a fungible ERC-20 token while CFAs are developed using non fungible ERC-1155 contracts.

CFAs can be minted only by using BloomBeans currency, the BEAN, which serves as the unifying code linking all elements of the system.

ERC-1155 tokens have been chosen because they enable efficient management of a diverse array of assets under a single contract, significantly lowering the transaction costs and complexities that typically arise from managing multiple token contracts.

Mathematical Basis: The BloomBeans financial system has been developed using simple mathematical formulas that allow for transaction cost reduction and strong financial streamlining. Any user can calculate future profits by applying the formulas in an Excel spreadsheet.

Translating Math to Blockchain: Blockchain technology today can be better understood as a simple and expensive to run database. However, when programmed correctly, it becomes highly valuable for its resistance to censorship and manipulation. This characteristic enables a crucial application: financial developments.

A significant degree of mathematical simplicity is essential for blockchain to function efficiently. To achieve this, complex mathematical formulas have been translated into tables (such as Interest Rate tables) to avoid the need for intricate calculations.

Security: For complete safety, the code is released audited and locked. No further modifications of the code can be made.

Evolution: Any improvements to the system, like the release of the BloomBeans proprietary blockchain, will be airdropped for free to the users of the previous system version.

9 - Conclusion

"Nothing is more powerful than an idea whose time has come" Victor Hugo

Inspired by Satoshi's vision and the principles of the cypherpunk movement, and after 14 years of development within the crypto community, we now possess a set of tools capable of replicating a financial system in a simple yet powerful way.

We are part of a global effort to provide decentralized solutions to today's oppressive corporate-political-banking oligarchical structures that are in fact burdening societies with the weight of their own incompetence and wasteful management.

With a new financial system rooted in the eternal laws of mathematics, not in a perpetual power struggle, society will not only leave behind an unjust system, but also an antiquated mindset of scarcity, confrontation, selfishness, and personal and social irresponsibility.

Every day, more people are opting out of the system. Slowly but surely, we will achieve new levels of freedom and social well-being, all while witnessing the old guard of global power fade into irrelevance.

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