SDG

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01 Executive Summary

The business community seems to realize that the charity factor has the capability of expanding marketing and networking opportunities. Thus, an ideal business should have the potential to enrich every stratum of society as well. SDG is determined to empower and support United Nations Sustainable Development Goals by harnessing the full potential of blockchain technology. "The sustainable development goals (SDGs) are a universal plan for all countries to end poverty, protect the planet, and ensure prosperity for all. They are a set of 17 goals which include 169 targets. They provide a focus for the international community's development efforts until 2030 and are the yardstick by which progress will be measured. They are intended to be tackled as a group rather than individually - the 17 goals are interlinked1."

The Global Impact Investing Network (GIIN) had surveyed in 2018 to identify the barriers in the way of impact investment. The emergence of blockchain technology has made it feasible to address the factors responsible for these barriers. It offers an "SDG token" as a solution, representing a group of tokens with a dedicated role in unlocking investments with social and environmental impact. The solid framework is based on an immutable ledger that enables the transfer of value, maintaining trustworthiness, and digital tokens that can be easily programmable through "smart -contracts."

02 SDG Strategy

Todays, new evidence emerges of humanity's negative impact on the environment - and of growing inequality. A third of the global population lacks access to clean water, global warming is creating deadlier weather patterns, hundreds of millions of children are being deprived of access to education, and income inequality is on the rise as some 3.4 billion people are forced to live on less than $5.50 a day. The United Nations' Sustainable Development Goals and the Paris Agreement provide an architecture for addressing these challenges, by fundamentally shifting the ways that societies produce, consume, and operate. Realizing related opportunities to pursue the Sustainable Development agenda, however, will require closer cooperation between the public and private sectors Especially all members of society.

While there are significant disparities in life expectancy in various parts of the world, no country currently has a life-expectancy rate lower than the highest rate as of 1800. Other signs of progress: the global population living in absolute poverty has declined from 82% to just 9% during the past century, while the number of functioning democracies has increased to 123 from 16, and the global literacy rate has jumped to 85% from 32%. Economic growth has fuelled these improvements, but lately there have been various troubling signs.

According to the Lancet Commission on pollution and health, an initiative started by the medical journal The Lancet, the Global Alliance on Health and Pollution, and the Icahn School of Medicine at Mount Sinai, environmental pollution has reduced annual global economic output by 6.2%, and caused 9 million premature deaths, roughly.

More than 80% of the global population lives in a country that is dedicated to achieving the United Nations Sustainable Development Goals, outlined in 2015 to help put the world on a more sustainable footing by 2030. However, 70% of these national SDG-integration plans fail to clearly identify a financing strategy that includes both private and public funds.

Greater public-private cooperation is key to reversing this trend and addressing an estimated $2.5 trillion annual gap between what is on hand and what will be needed to achieve the goals in developing countries. More capital needs to be mobilized through innovative methods like blended finance (combining funds from public and private investors in a way tailored to each party's risk appetite) and aggregation vehicles (which pool multiple development projects into a single investment vehicle) and it needs to be better allocated. Urgent action is necessary at the country level particularly, where key public and private stakeholders have an opportunity to work together and establish benchmarks for success. It is important to enable the people behind existing country-level efforts to exchange ideas, share best practices, and explore ways to cooperate in the future. The efforts of developing countries particularly will be crucial for the achievement of the SDGs - not least in terms of establishing the healthy regulatory environment, rule of law, and political stability necessary to create an attractive investment climate. United Nations Integrated National Financing Frameworks have now been introduced in dozens of developing countries, in a bid to help governments there better identify funding gaps and develop strategies for financing the SDGs.

According to a report published in 2019 by the Overseas Development Institute, the poorest of these countries may have to come up with an entirely new approach to tools like blended finance in order to bridge the nagging financing gap; while every $1 invested by multilateral development banks and development finance institutions in lower-middle-income countries mobilizes on average $1.06 in private financing, that figure falls to just $0.37 for low income countries, according to the report.

According to the World Economic Forum (2015) by 2027, 10% of global gross domestic product (GDP) will be stored on blockchain-based platforms. The technology of blockchain has dispensed the need for a middleman between the donors and beneficiaries because the data stored is immutable and interconnected. All the transactions are stored in blocks, which are further connected to previously created blocks. Consequently, it becomes extremely difficult to make any changes without altering subsequent records. The verification of transactions is accomplished only when participants commit changes to each other. 'SDG token' targets harnessing the potential of blockchain technology to address climate change and support UN Sustainable Development Goals.

2.1 The Mission

Our initiative supports the Sustainable Development Goals (SDGs), also known as the Global Goals which are a set of intergovernmental agreed goals related to international development that follow the Millennium Development Goals and create the Sustainable Development Agenda finalized by member states during the Rio+20 Summit. The goal of the SDGs is to "LEAVE NO ONE ALONE". Our mission is to support and conduct comprehensive technological, environmental, social, and economic measures that lead to the achievement of sustainable development goals.

We execute and discover our projects under the goals and principles of sustainable development, and we will try to institutionalize these goals at all levels of society. It is a mission statement for a public invitation to move towards sustainable development.

2.2 The Vision

The SDGs are ambitious but within human dignity, we are determined to work bravely to end economic, social, and environmental injustice and inequality by providing transparent, Innovative, dependable, and efficient solutions and using blockchain technology – together we can make them come true.

According to the sustainable development global goals, the word "WE" needs to be redefined. From our perspective, "WE" means all the earth's inhabitants including plants, animals, and humans. This creative team has organized a plan so that we might all experience happy, inspired, safe, and healthy lives by enticing public participation, and strengthening social and environmental values.

03   Problem

3.1 Economical

The traditional model based on the centralized financial ecosystem has always favored the wealthy and the financially sophisticated population, thus inviting criticism. The unbanked population has always struggled for financial inclusion. According to a McKinsey report, in 2017, two billion people lived outside the financial system and it cited two main causes behind this namely high costs and the location of physical branches.

In most of the underdeveloped regions of the world with authoritarian regimes, hyperinflation, and weak financial infrastructure, a majority of the population does not have access to elementary banking services such as cashing a check, transferring money, or even withdrawing cash.

In the Middle East and Africa, 50% of the population is financially excluded, South and Central America follow at 38%, Eastern Europe and the former Soviet republics at 33%, and Asia Pacific's share stands at 24%. But what makes the statistics more surprising is that even one of the most developed regions of the world, such as North America has a huge proportion of its population staying unbanked.

According to a 2019 report by the Federal Reserve, 22% of American adults (63 million) are either unbanked or under-banked. Both categories rely on very unreliable alternative financial products and services — such as payday loans, check cashing services, money orders, and pawnshop loans. One major reason for such numbers is the inherited barriers to entering the traditional financial system. This has seriously affected the economic capabilities of respective regions as the economic participation of the population has a direct relation with the overall economic development in that region.

Every financial service involves considerable costs including the operational cost of physical branches, the cost of maintenance of infrastructure (branches, ATMs, and call centers), and the cost incurred to support technology, product launches, and pilots. Simple operations like shipping and transporting

cash can be a costly affair. Bank of America spends roughly $1 billion a year just moving cash around within its branches.

All these operational costs must be transferred to the cost of the product and the services, and ultimately to the customer, making services and transactions costlier for certain sections of society and business models.

Generic barriers to entry, along with the excessive costs of traditional financial institutes, have criticized by a section of the population seeking inclusiveness, convenience, and less frictional financial products. The global economy requires solutions outside the periphery of traditional finance to bring the unbanked population into the banking umbrella.

3.2 Social

Rising inequality is affecting more than two-thirds of the population across the globe, widening the gap between the haves and have-nots worldwide.

The living conditions are vastly unequal in separate places in our world today. A considerable proportion of the population faces challenges, particularly around food security, malnutrition, medical care, shelter, lack of education, and employment opportunities. This scenario is affecting both the social and economic inclusion of their communities. Basic needs, such as food security, are a privilege in some regions. 9.2% of the world survives on less than $1.90 a day.

- Children and youth account for two-thirds of the world's poor, and women represent a majority in most regions.
- Extreme poverty is increasingly concentrated in sub-Saharan Africa. About 40% of the region's people live on less than $1.90 a day.
- Extreme poverty rates nearly doubled in the Middle East and North Africa between 2015 and 2018, from 3.8% to 7.2%.
- About 70% of people older than 15, who live in extreme poverty, have no schooling or only some basic education 2.
- The Global Multidimensional Poverty Index looks beyond income to measure a person's healthcare, education, and living standards to determine poverty levels.
- 1.3 billion people in 107 developing countries, which account for 22% of the world's population, live in multidimensional poverty. About 84.3% of multidimensional poor live in sub-Saharan Africa and South Asia.
- 644 million children are experiencing multidimensional poverty   3.

Sub-Saharan Africa is among the poorest regions followed by Central, and Eastern Asia, and the Pacific. This directly has an enormous impact on their future employability and prosperity. In these economies, the unemployment numbers are record high which culminates in the vicious circle of poverty. This deprives them of tools of economic empowerment making them vulnerable. A financially healthy society must have a strong infrastructure and sufficient resources for education, skill development, and employment so that they can participate fully in economic, social, political, and cultural life.

3.3 Environmental

Stakeholders, including eco-conscious consumers, have been showing keen interest in the environmental performance of all the stakeholders in a supply chain. They seek responsible production and consumption activities. It has become vital important to measure the environmental impact of every product for understanding exactly where and how each product and its components made and their origins.

While business leaders are under continuous pressure to improve environmental performance throughout their supply chains, it is not easy for them to monitor and evaluate their environmental performance. More organizations need to commit to an environmentally conscious supply chain where it is easy to verify the sustainability credentials of the stakeholders involved in a particular supply chain.

3.3.1 Waste Management

The existing waste management programs have not been highly effective due to certain factors like the absence of tracking and monitoring systems, lack of incentivization, and a sense of accountability. Companies and individuals cannot hold accountable for the waste they have created. No platform places producers, consumers, and waste management operators into a network together.
The following factors make waste management difficult:

- Unavailability of structured data
  Siloed data stays
- Data's susceptibility to misrepresentation

All these factors pose a great hurdle in evaluating the effectiveness of the waste management system and hence, incentivization programs often fail to deliver.

The failure to run recycling programs is causing serious concerns as most of the recyclable waste is still making its way into landfills, releasing dangerous toxins that pose a greater threat to the environment than previously thought. In some cases, natural resources are being stretched in an exploitative manner even when they can be recycled. For example, many types of smartphones contain rare minerals like cobalt, which could be reused to make new products. Rather than mining more or sourcing it from areas, manufacturers can recycle this cobalt and help the environment.

3.3.2 Energy Trading

Traditional power grids are centralized, which can create inefficiencies in energy distribution - such as having surplus energy at one place and power outages at the other. The Ever-rising demand for power globally is causing power shortages. As increased blackouts affect society globally, there is a looming fear of failures on overworked grids and stressed energy systems. The current utility network is still running through intermediaries, and consumers and producers struggle to gain ownership over their energy system. As there is no automated system to assure traditional grid operators about the correct connectivity of devices and safe and authorized distribution of power, these utility networks remain highly dependent on human intervention. Energy delivery needs to evolve with more distributed choices so that electricity directs to where it is needed at the right time and with the right resource.

3.3.3 Environmental Treaties

Though many international agreements, like Paris Agreement 2015 to reduce carbon emissions, have been initiated so far, its efficacy has been limited primarily because of the absence of end-to-end carbon emissions traceability solutions and an efficient and trustless carbon credit ecosystem. As efforts to decarbonize the global economy are picking up, the demand for reliable and decentralized platforms to assess, store, trade, and manage carbon emissions is on the rise. However, the following issues have emerged as major roadblocks:

- Unavailability of real-time carbon emission data
  Absence of carbon emission standards
- Measuring carbon emissions in a standardized manner
- Locating generation points of carbon emissions
  Inefficient carbon offset market favoring larger corporations

3.3.4 Supporting Environment-driven NGOs

NGOs lack a transparent system where the internal operations, such as the inflow of donations, the management of funds, and the project progress remain closed to the donors. In many cases, donations to NGOs have been put to illegitimate use, which results in distrust amongst donors. They seek proof of whether their money spent on legitimate and genuinely helpful projects. The practice discourages the donors, and the efforts to support these NGOs affects greatly. NGOs cannot receive the right support from genuine donors in absence of a transparent system that informs about the flow of funds. This affects the sustainability of these NGOs.

3.3.5 Carbon Pricing

In the current system, the environmental impact of each product is difficult to determine, and its carbon footprint is not a factor into the price. This indicates that there is little incentive for consumers to buy products with a low carbon footprint and little incentive for companies to sell such products. Inventors and innovators do not feel motivated as there is no way to incentivize them for developing and introducing low-carbon products and processes. As there is no mechanism to set carbon pricing, the cost of products producing high carbon emissions could not raise. There is a need to raise the price of high-carbon products to raise awareness among consumers about carbon-intensive goods and services and that they should use more sparingly. This will also motivate the manufacturers to produce energy-efficient products.

04   The Solution

SDG Token, based on crowdsourcing approval, offers an incredibly suitable alternative to investment and cost, and by defining and implementing projects with positive social and environmental effects, it plays significant role in redefining "Business". SDG token proves that an investment, however small, has had a positive impact, and with the traceability it provides across the blockchain supply chain ecosystem, investors can track their investments and progress.

4.1 Blockchain-driven Proposed solutions

4.1.1 SDG token: A Technical Solution

The SDG token, being a digital token, plays a key role in the decentralized, secured, and transparent software environment. It makes dynamic utilization of the three latest technologies i.e., Global positioning system (GPS), Internet of things (IoT), and RFID (Radio Frequency Identification) - a method for tracking goods through tags that transmit a radio signal. Since a digital token represents its holder's rights, it can be used as a reward for the benefit of services or goods as well. In the blockchain network, each product is tagged with an RFID tag. This tag has a unique digital cryptographic identifier interconnecting to the virtual identity of the tagged product. Now this virtual identity is used to represent the product information and its manufacturing process. A decentralized permanent, tamper-proof data warehouse, which is packed with database software, is used for data storage.

4.1.2 Pollution check

The installation of appropriate control sensors for each industry ensures the delivery of transparent reports to network users. A blockchain dedicated to the SDG network immediately and automatically charges the offending organization in case it releases pollutants over the predefined environmental standard. This reduces carbon emissions thereto. Businesses with environment-friendly supply chain options enjoy special status in many countries 4, 5, 6.

4.1.3 Utilizing renewable energy

The SDG Token strives to create and develop smart grid-based electricity distribution networks generated by clean energy based on blockchain. The SDG token offers access to the energy donation pool and serves as a priority access to the energy auctions. Thus, local manufacturers or consumers can trade in electricity by selling and distributing solar power to their neighbors without the need for a middleman. The SDG token will also function as an incentive or reward to both producers and consumers of electricity. Buying clean energy at mutually beneficial terms will reduce environmental pollution as well. Automated electricity generation from clean energy sources would enable institutions, companies, and individuals to get returns from directly investing in renewable energy installation. The SDG Token can be used as an incentive in this network. By coordinating and cooperating with leading blockchain and environmental organizations, relevant international law can be defined. thus, a plan for an International Fund to drive blockchain to support sustainable development goals 7, 8, 9.

4.1.4 Creating energy markets

The SDG token plans to enter new energy markets, enabling tracking and trading of energy, flexibility services, and environmental commodities. The SDG network organizes financial resources to raise capital by issuing its energy tokens. These tokens are digital representations of the energy they commit to produce and deliver. The funds raised would finance the environmental projects related to carbon sequestration and the operation of greenhouses. Accessing transparent and verified data on the blockchain network platform is encouraging and trustful for network users, thus creating interest among the communities of developing countries to use and exploit the blockchain network for renewable agricultural projects 10, 11, and 12.

4.1.5 Supporting the concept of carbon credit

The SDG Token can be a digital representation of carbon credit, which can be traded anywhere in the world. Anyone can participate in carbon credits with the cooperation of international organizations and recognize environment-polluting companies. Participants get tokens as a reward for disclosing relevant information and contributing toward social responsibility. The international organizations working for environmental protection have executing power, so these organizations can compel the guilty company to participate in projects related to environmental protection. Marketing SDG Tokens among carbon emission companies will bring global awareness of the significance of greenhouse gas projects. This will create a global consensus to put pressure on concerned companies to rely on SDG Tokens 13, 14, 15, 16, and 17.

4.1.6 Environment-friendly supply chains

The SDG Token plans to participate in projects related to the development of sustainable seafood production. With the deployment of blockchain technology, the SDG token intends to make supply chains more transparent. This way, consumers will be better informed of how each product was made and shipped so they can make more environmentally friendly choices. They further aim to finance the implementation of water production projects from air and sea water greenhouses by utilizing the full potential of the sea and raising funds by tokenizing the projects. Thus, the investors will gain cost confidence in the profitability of projects. By tracking food, buyers are made aware to purchase local products knowing that it was grown locally. Reduction in traveling long distances would also cut down on carbon emission [18].

4.1.7 Solution for plastic waste

The SDG network would exchange plastic for SDG tokens as a reward for cleaning up the world from plastic waste. Implementing the idea of turning plastic into SDG tokens by setting up collection centers is another solution, which is in the pipeline. People can deposit used plastic in exchange for SDG tokens and avail of services like phone charging, or items like cooking fuel. Various cities and residential areas are likely to have smart bins, and tokens are paid as a reward for being protective and rational towards the environment [19, 20].

4.1.8 Overcoming water challenges

The SDG token is capable of effectively addressing various issues caused due to water challenges in many countries. An array of machine learning algorithms is planned to be used to constantly recalculate the gallon value of tokens monthly. The low-income households and even industries can sell their excess tokens in the exchange. Blockchain can play a vital role in observing water quality and its appropriate distribution in various geographical areas. GPS, IoT, and smart contracts can help in executing it with high accuracy and transparency. This discourages corporations and governments from misreporting their progress because the technology would track important environmental data. Legal document storage on the blockchain detects fraud and manipulation too [21, 22].

4.1.9 Interactive and trustworthy platform for donations

'Metaverse development,' supporting the SDG token will be an environmentally friendly approach. Individuals and organizations can purchase, sell, or donate land, equipment, and products virtually. Digital technology helps in setting up new ventures or launching projects like virtual greenhouses. Higher education, medical, military, and other types of trades can deliver a more immersive learning experience through the virtual world. It helps in reducing traffic and unemployment directly. Issues likepoverty and hunger could also be addressed indirectly by more equitable distribution of wealth through these donation-facilitating virtual platforms. Donations can be difficult to track. Bureaucracy, corruption, and inefficiency are still common in the world of charity. Blockchain enables transparency and traceability of funds. Blockchain technology eliminates the need for middlemen or centralized authorities and enables funds to be transferred without bank accounts [23, 24].

4.1.10 SDG & Women empowerment

According to RACHEL WOLFSON, Dated OCT 19, 2021, on cointelegraph.com; "Female artists are creating NFTs to empower women everywhere, proving that crypto isn't just an all-boys club." She further added that the NFT, in the honor of the first woman to own a seat on the New York Stock Exchange, is currently being auctioned off to fund scholarships and mentorship programs for women and girls in finance. Our project looks forward to following the steps of altruists and dedicating our crypto to neglected segments of society. The funds raised could also be channeled towards tracking females who have been trafficked or who have gone missing. Smart contracts, GPS, RFID, and IoT empower the blockchain to offer transparency and audibility which helps authorities to locate missing persons by storing documents related to the identification of women or girls.

4.1.11 SDG token-A Zenith as energy saver

Our project endeavors to present a comprehensive approach based upon minimum computations, low energy consumption, and high performance. It spares no effort to achieve the goal of channelizing Blockchain technology into an environment-friendly solution in favor of humanity.

4.2 Actions to Achieve SDG

United Nations (UN) adopted a new agenda in 2015 as a blueprint for peace and prosperity on the planet. At the core of this agenda, there are 17 sustainable development goals (SDGs) that call for cooperation between all countries to achieve these goals. The main pillars of this agenda can be listed as reducing poverty, improving education and health facilities, enhancing economic growth while reducing the consumption of non-renewable resources. There is also significant emphasis on mitigating climate change, preserving land and marine biodiversity. Moreover, the global partnership is promoted to sustain peace and end violent conflicts. These goals focus on many aspects of sustainable human development.

Actions to Achieve SDG 1

Individual	Business	Policymakers
Get a decent work. Help those in need.	Offer decent salaries. Respect labor rights.	Protect the poor. Provide social safety nets.
Buy from companies with fair employment labels.	Initiate campaigns against poverty.	Collaborate with businesses to fight poverty.
	Do not employ child labor.	

Actions to Achieve SDG 2

Individual	Business	Policymakers
Buy local food. Buy sustainable food. Grow food from organic compost.	Innovate notionally enhanced food Reduce food loss in supply chain. Recycle food. Donate to food banks.	Support agriculture. Policies to stabilize food prices. Invest in rural development. Promote healthy food.

Actions to Achieve SDG 3

Individual	Business	Policymakers
Adopt healthy lifestyle. Protect self-health. Avoid hazardous cleaning chemicals.	Improve healthcare technology. Promote healthy economies. Smoke-free, alcohol, and drug-free workplace.	Expand medical service coverage Invest in healthcare. Access to quality healthcare services.

Actions to Achieve SDG 4

Individual	Business	Policymakers
Share collective knowledge. Dedicate children in need. Caring about early education.	Investing in education. Promote scholarships. Provide staff training.	Improve quality of education. Curriculum development. Assessing school quality.

Actions to Achieve SDG 5

Individual	Business	Policymakers
Treat all children equally. Respect women. Support women.	Promote equal opportunities. Promote leadership roles. Pay same salary for equal work.	Fair access to schooling. Empower women. Polices to end child marriage.

Actions to Achieve SDG 6

Individual	Business	Policymakers
Reduce water use.	Optimize water use. Improve water and sanitation management.	Access to sanitation services. Raise awareness about water issues. Manage waste dumping.
Donate to build water wells.	Clean technologies for seawater desalination.	
Participate in world water day awareness activities.		

Actions to Achieve SDG 7

Individual	Business	Policymakers
Use clean energy	Invest in wind, solar and thermal power.	Invest in clean and renewable energy resources.
Choose affordable and clean energy.	Reduce fossil fuel use.	Expand infrastructure.
Do not use non-renewable energy resources.	Implement clean energy resources.	Tax carbon business.

Actions to Achieve SDG 8

Individual	Business	Policymakers
Be informed about labor rights.	Promote sustained economic growth.	Policy against human trafficking.
Do not involve in illegal business activities.	Creating new jobs.	Invest in technology innovation.
Support justice and fairness.	Offer career opportunities for women.	Encourage entrepreneurship.

Actions to Achieve SDG 9

Individual	Business	Policymakers
Use latest technologies.	Invest in infrastructure.	Promote sustainable technologies.
Get enrolled in latest business.	Manage resources efficiently.	Develop advanced infrastructure.
Demand companies to use sustainable business practice.	Adopt creative and innovative workplace.	

Actions to Achieve SDG 10

Individual	Business	Policymakers
Respect minority rights. Abide to the laws of equality. Raise voice against inequality.	Reduce inequality. Promote fairness and justice. Actions against inequality.	Policies against inequality. Protect minority rights. Provide equal opportunity laws.

Actions to Achieve SDG 11

Individual	Business	Policymakers
Do not use plastic. Practice recycling. Use solar energy.	Eco friendly practices. Effective land resource allocation. Use renewable resources.	Enhance job opportunities. Reduce pollution. Policies against waste. Develop city planning.

Actions to Achieve SDG 12

Individual	Business	Policymakers
Demand responsibly produced products.	Management of chemical uses.	Raise awareness in food and agriculture sector.
Waste material should be properly disposed.	Reducing, recycling and reuse of materials	Support renewable energy resources.
Do not waste food.	Management of waste product.	Set policies for business to use environmentally friendly practices.

Actions to Achieve SDG 13

Individual	Business	Policymakers
Buy local.	Reduce carbon emission.	Invest in renewable energy.
Demand eco-friendly brands.	Promote eco-friendly brands.	Address climate change.
Volunteer in climate change programs.	Invest in clean energy.	Policies against carbon emission.
Reduce travel		

Actions to Achieve SDG 14

Individual	Business	Policymakers
Do not use plastic.	Adopt sustainable business practices.	Policies against coastal pollution.
Use biodegradable materials.	Do not overexploited marine resources.	Protect marine life and coastline resources.
Do not dispose waste into the oceans.	Implement sustainable technologies.	Ban plastic product to be use in marine areas.
Support beach cleaning campaigns.		Setup fishing rules.

Actions to Achieve SDG 15

Individual	Business	Policymakers
Avoid hunting for sports.	Invest in the protection of endangered species.	Protect terrestrial and freshwater resources.
Stop activities that harm wildlife.	Do not use non-renewable resources.	Policies against Deforestation.
Raise voice against illegal activities.	Use land resources efficiently.	Control animal trafficking.
		Initiate environmental law.

Actions to Achieve SDG 16

Individual	Business	Policymakers
Enhance the peace resolving sense.	Conflict resolution techniques among employees.	Promote peace.
Do not practice violence.	Collaborate internationally.	Provide access to justice.
Peacekeeping practices.	Prevent violence in workplace.	Policies against violence.
Demand free media.		Policies against human trafficking.
		Respect freedom of speech

Actions to Achieve SDG 17

| Individual	Business	Policymakers
Self-investment to get latest technologies.	Developing global partnerships.	Access to information and technology to all.
Prefer partnerships.	Promote access to the Internet.	Promote innovation.
Share knowledge.	Share experience with developing countries.	Encourage cross-border business activities.
	Cross sector partnerships.	

Proposed Solution

Proposed Solution 1

SDG Token is a decentralized system that utilizes IoT technology such as RFID, and GPS to gather, transmit, and disseminate the related data of manufactured products. Each product is tagged by an RFID tag containing a unique digital cryptographic identifier interconnecting to the virtual identity of the tagged product in the blockchain network. This virtual identity is shown as a profile containing the product information and its manufacturing process. Big data is loaded in a decentralized data warehouse, packed in BlockchainDB software, and thus shown in a completely transparent manner. Indeed, it might have been controlled and managed by a combination of policies about interacting credentials situations.

Advantages

One of the chief advantages of the proposed solution is the rapid identification and removal of expired, contaminated, and decaying products to prevent the spread of diseases from the supply chain. Another benefit is distinguishing between organic and non-organic products by the consumer and transparency in their distribution or supply cycle. Tracking products by manufacturers and distributors just in a few seconds is another advantage of the suggested solution.

Executing the proposed solution can be considered to help achieve the results of target 1.5 of the first goal and targets 2.1, 2.3, 2.4, and 2.C of the second goal, and is strived at helping to achieve the target 3.9 of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 9.1, and 9.5 of the ninth goal of Sustainable Development Goals, too.
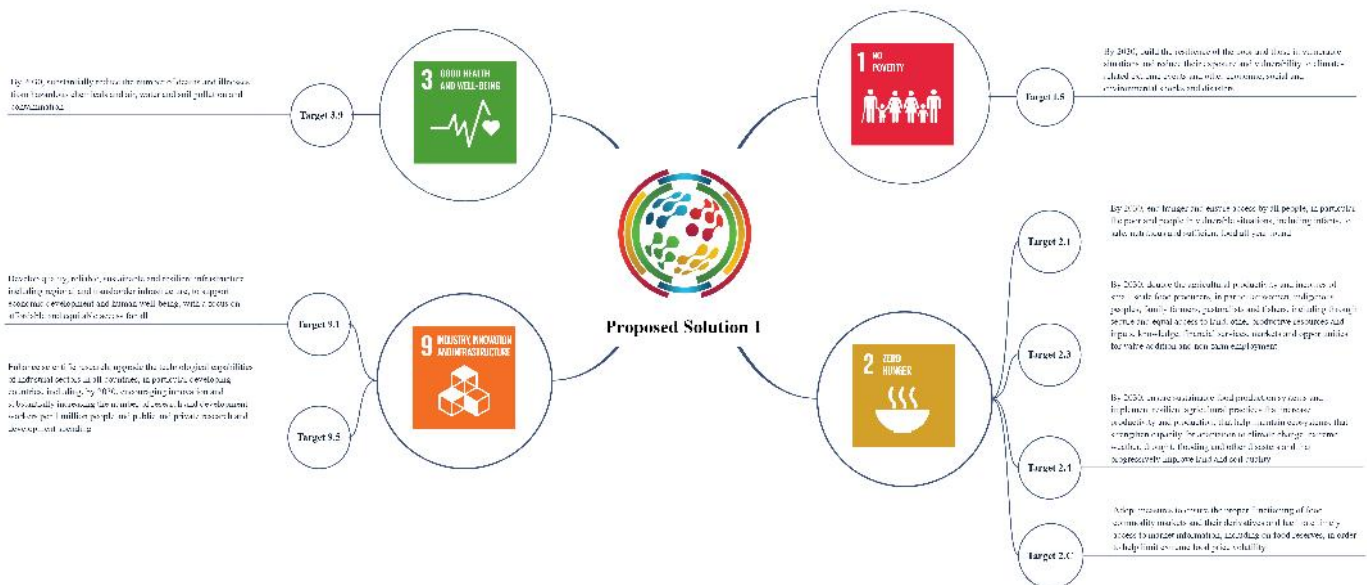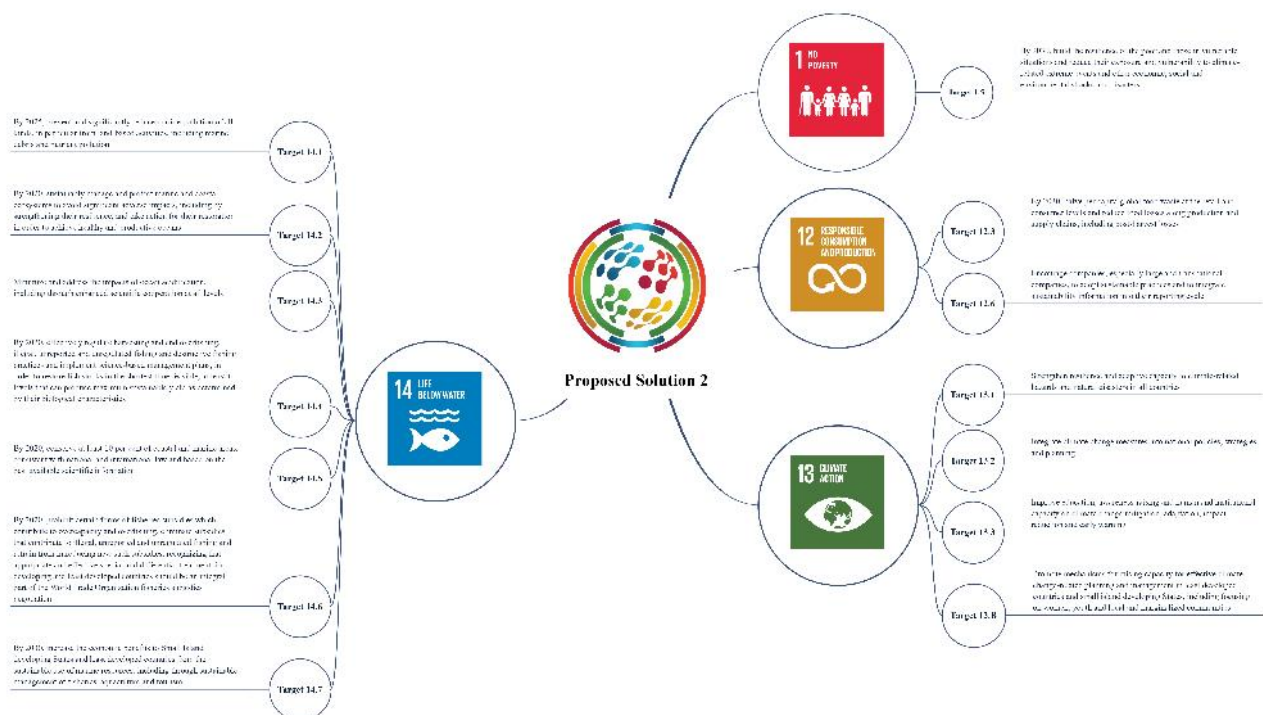
Proposed Solution 2

The dedicated blockchain SDG network controls the type and amount of pollution emissions by installing and setting up appropriate control sensors for each industry provides reports to network users in a transparent manner. It is also possible that in case of release of pollutants over the environmental standards, the penalty has immediately and automatically charged on the offending organization. Finally, the corresponding statements are reported to the network users.

Smart bins can also be installed in cities and residential areas, and tokens are paid as a reward to the network users to help further protect the environment.

The proposed solution could be more reasonable and transparent management of the product supply chain by creating and developing a blockchain network. That is, a powerful decentralized and distributable application tracks the process from manufacturing to the sale of an ethical product and transparently distributes product information such as geographical location, production date, and shipping status. For example, when buying a coffee bag from a store, the client can use this application to find out exactly where the coffee was produced. Businesses can create supply chain options that are more environmentally agreeable. For example, encouraging people to buy locally sourced products will reduce long-distance travel and finally reduce carbon emissions.

Advantages

One of the chief benefits of the proposed solution is identifying the type and the amount of pollution emitted in each industry and controlling them automatically. Another advantage is raising information flow transparency without information fraud ability and manipulation. Automatic application of penalties for erring organizations and encouraging network users to recycle and receive rewards are other advantages of the suggested solution. Executing the proposed solution can be considered to help achieve the results of target 1.5 of the first goal and targets 12.3, and 12.6 of the twelfth goal, and is strived at helping to achieve the targets 13.1, 13.2, 13.3, and 13.B of the thirteenth goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, and 14.7 of the fourteenth goal of Sustainable Development Goals, too.
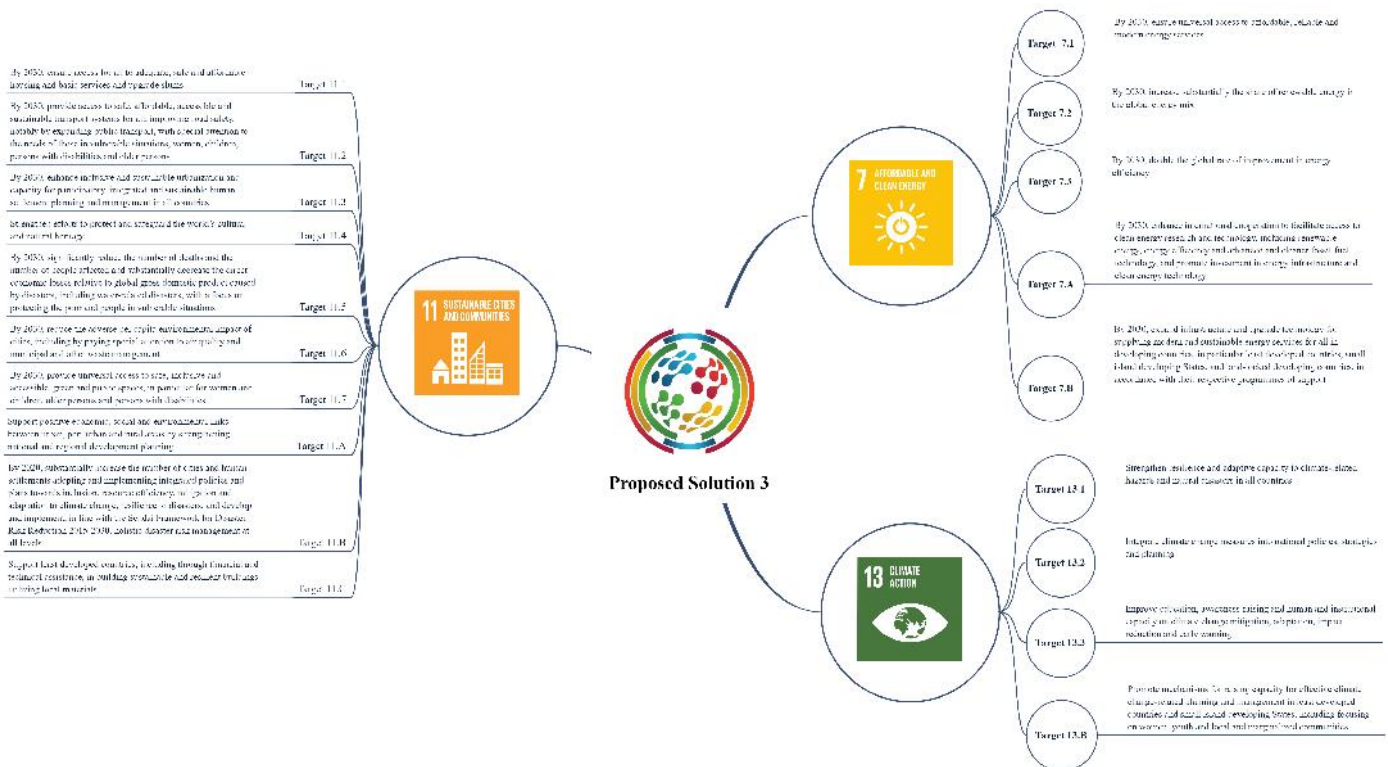
Proposed Solution 3

SDG Token desires to actively participate in the construction, utilizing, and operation of projects corresponding to the conversion of waste into energy by enticing appropriate capital from the community of environmentalists and organizations involved in municipal and industrial disposals. To be able to help achieve the goal of producing clean energy.

SDG Token also plans to create, develop, and conduct a Smart grid-based electricity distribution network generated by clean energy based on the blockchain infrastructure, modeling the illustration of thriving businesses such as "WePower" and "PowerLeger". So, the local manufacturer and consumers can have their local supply and demand market.

Advantages

One of the chief benefits of the proposed solution is consuming affordable and clean energy concerning the consumer's choice. Another advantage is identifying fossil fuel energy manufacturers and encouraging them to produce clean energy. Buying clean energy produced from the local market for a fair amount and solving the environmental pollution issues of municipal and industrial waste are other advantages of the suggested solution. Executing the proposed solution can be considered to help achieve the results of targets 7.1, 7.2, 7.3, 7.A, and 7.B of the seventh goal, and is strived at helping to achieve the eleventh goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 13.1, 13.2, 13.3, and 13.B of the thirteenth goal of Sustainable Development Goals, too.
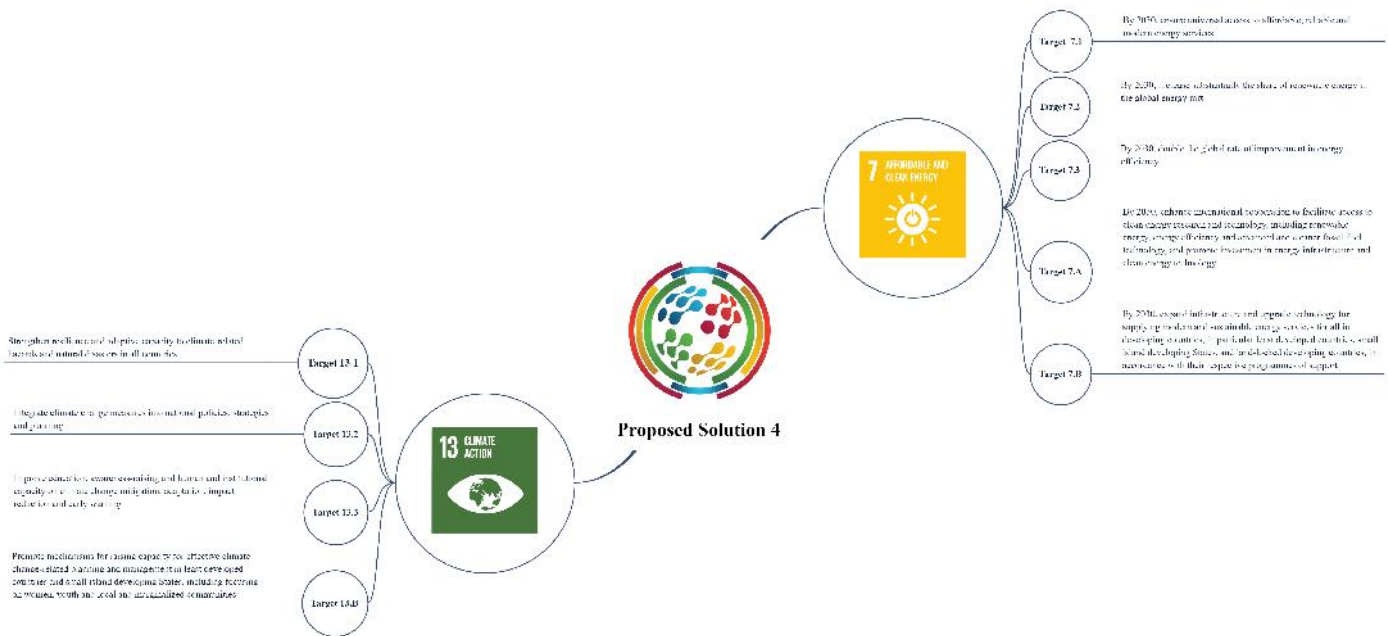
Proposed Solution 4

The dedicated blockchain SDG network organizes financial resources from the supply of tokens of the network to execute environmental projects, carbon sequestration, and the establishment, construction, and operation of greenhouses such as Seawater Greenhouse by the community of its network users.

SDG Token also plans to create, develop, and conduct a Smart grid-based electricity distribution network generated by clean energy based on the blockchain infrastructure, modeling the illustration of thriving businesses such as "WePower" and "PowerLedger". So, the local manufacturer and consumers can have their local supply and demand market.

Advantages

One of the chief benefits of the proposed solution is accessing transparent and verified data and statistics on the blockchain network platform. Encouraging network users to execute renewable agricultural plans and carbon sequestration is another advantage of the suggested solution.

Executing the proposed solution can be considered to help achieve the results of targets 7.1, 7.2, 7.3, 7.A, and 7.B of the seventh goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 13.1, 13.2, 13.3, and 13.B of the thirteenth goal of Sustainable Development Goals, too.
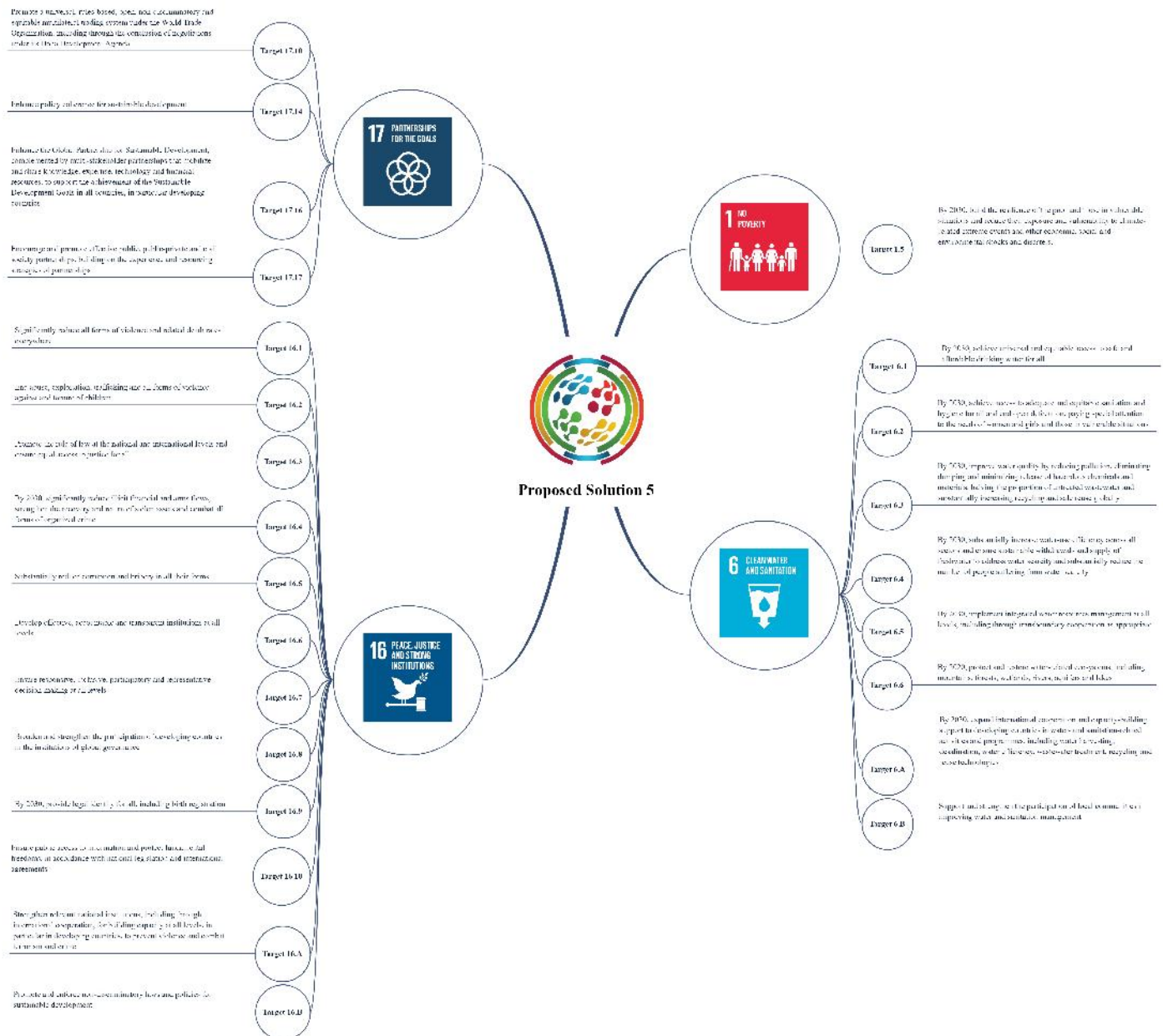
Proposed Solution 5

SDG Token by modeling from Project MOSS and Token MCO2, through cooperation with international organizations having the executive power, recognizes environmental polluting companies and greenhouse-gas emitters by disclosing relevant information and referring to social responsibility. Thus, they should compel to participate in projects related to environmental protection.

Advantages

One of the chief benefits of the proposed solution is financing the execution of carbon sequestration projects by marketing SDG Tokens to carbon emission companies. Distributing profits from SDG Token projects to users on the network and eliminating intermediaries is another advantage of the proposed solution.

Executing the proposed solution can be considered to help achieve the results of target 1.5 of the first goal and targets 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.A, and 6.B the sixth goal, and is strived at helping to achieve the sixteenth goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 17.10, 17.14, 17.16, and 17.17 of the seventeenth goal of Sustainable Development Goals, too.
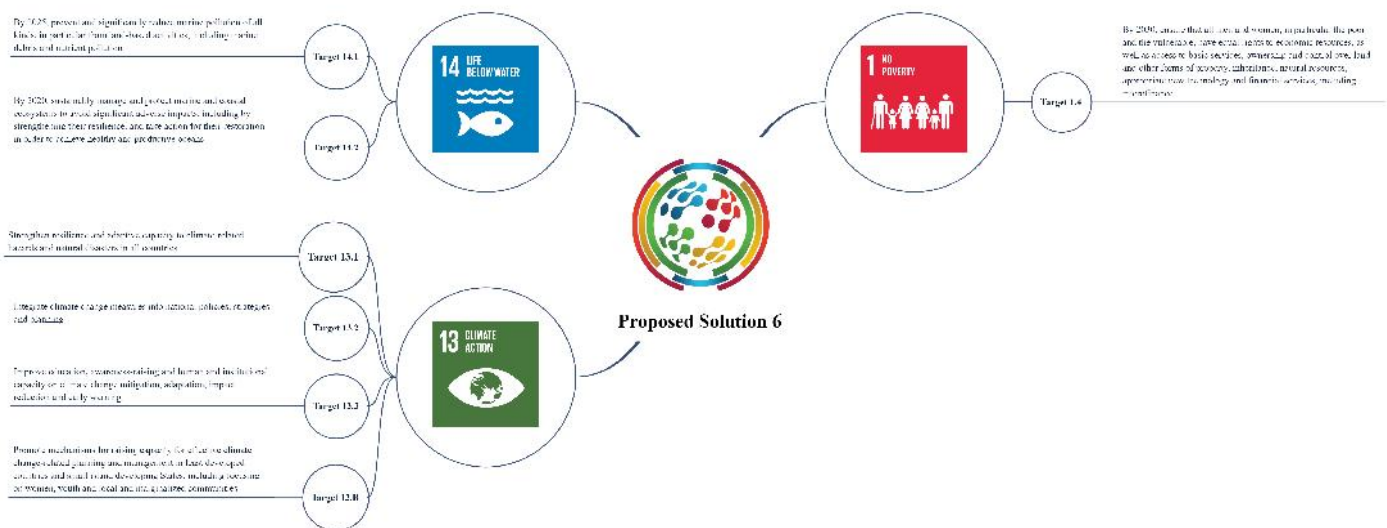
Proposed Solution 6

SDG Token participates in projects related to the development of sustainable seafood production by the ecological potential of the seas, the water produced from the air, and the implementation of Seawater greenhouses. Also, the severe blockchain benefits in sustainable marine products operate by launching dedicated SDG blockchain networks and tokenizing projects by the marine environment.

Advantages

The only chief benefit of the proposed solution identified is financing the implementation of water production projects from air and Seawater greenhouses.

Executing the proposed solution can be considered to help achieve the results of target 1.4 of the first goal, and is strived at helping to achieve targets 13.1, 13.2, 13.3, and 13.B of the thirteenth goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 14.1 and 14.2 of the fourteenth goal of Sustainable Development Goals, too.

Proposed Solution 7

SDG Blockchain is being used to create automated electricity generation and distribution networks from clean energy sources for the cryptocurrencies mining farms, and SDG Token can determine the value of exchanges in this network.

SDG Blockchain Support Company can also cooperate with leading blockchain and environmental organizations to define and describe relevant international law.

SDG Blockchain Network can also use modern technologies renewable and recycled resources based, such as the exploitation of quick-return resources, and achieve sustainable development goals, ultimately.

Advantages

One of the chief benefits of the proposed solution is cooperation with leading blockchain and environmental organizations to define and regulate relevant international law. The partnership to create International Fund to drive blockchains to support sustainable development goals is another advantage of the proposed solution.

Executing the proposed solution can be considered to help achieve the results of targets 7.1, 7.2, 7.3, 7.A, and 7.B of the seventh goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 15.2 and 15.9 of the fifteenth goal of Sustainable Development Goals, too.

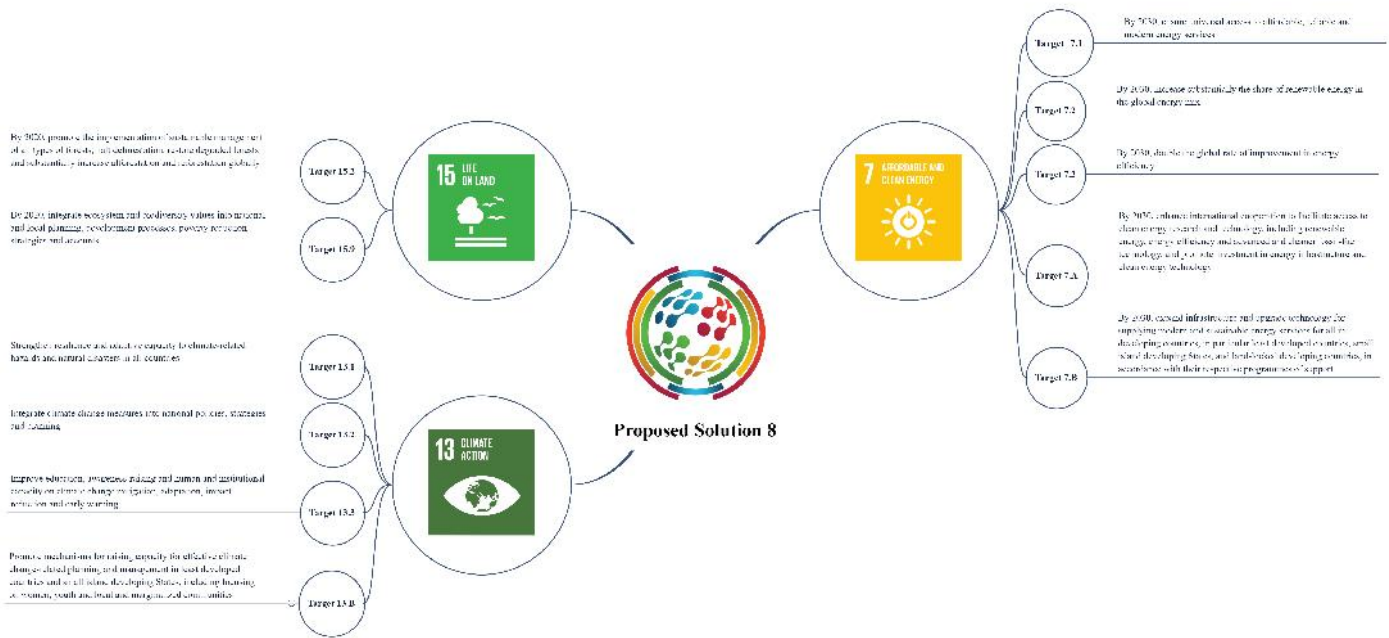Proposed Solution 7
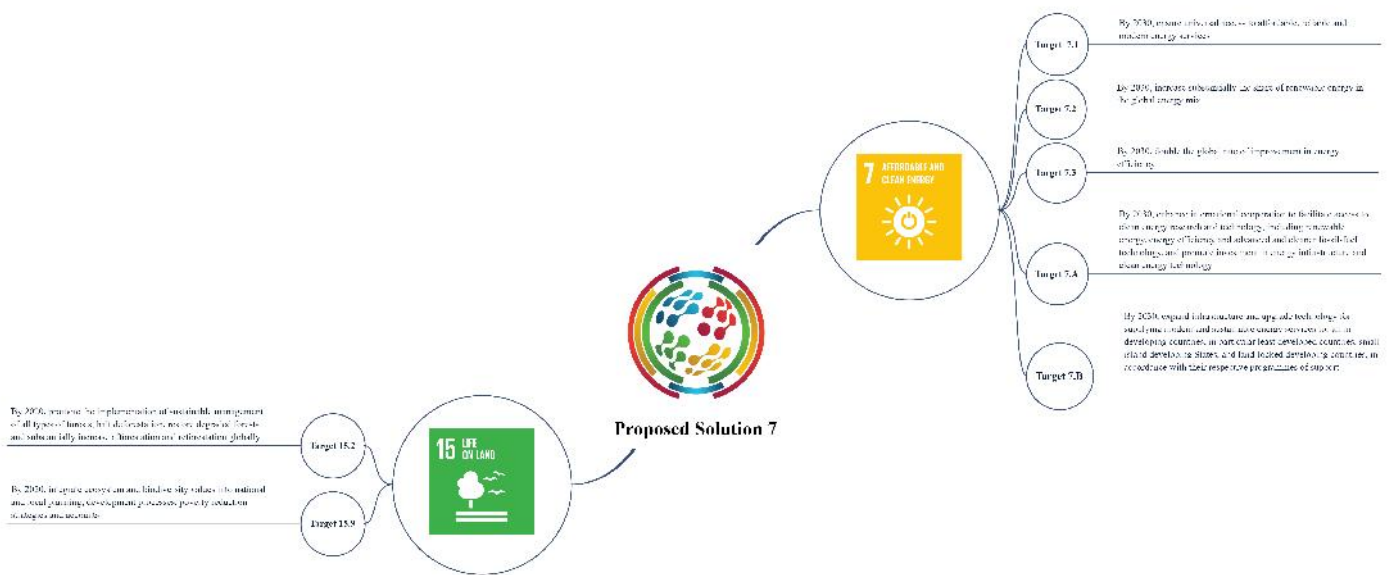
Proposed Solution 8

One of the chief challenges is the water challenges facing countries in which blockchain can play a vital role in observing water quality and its sustainable and appropriate distribution in various geographical areas.
By using IoT and blockchain technology, it is possible to perform public supervision of the water quantity and quality indicators with high accuracy and entire transparency. The automatic alerts can also provide to consumers in unusual and critical situations. On the other hand, it is possible to perform public oversight of the realization of the obligations of optimal water consumption and the condition of the water supply network equipment.

Advantages

The only chief benefit of the proposed solution identified is promoting sustainable responsible consumption as well as production.
Executing the proposed solution can be considered to help achieve the results of targets 7.1, 7.2, 7.3, 7.A, and 7.B ofthe seventh goal, and is strived at helping to achieve the targets 13.1, 13.2, 13.3, and 13.B of the thirteenth goal of Sustainable Development Goals. In addition, the proposed solution acts to help achieve the targets 15.2 and 15.9 of the fifteenth goal of Sustainable Development Goals, too.

Proposed Solution 9

Metaverse SDG can be created and developed concerning an environmental approach and sustainable development goals, in which individuals and organizations can purchase land, equipment, and products virtually. They can also set up their businesses, launch projects such as virtual greenhouses, and sell their products in Metaverse.

Advantages

One of the chief advantages of the proposed solution is reducing traffic and thus optimal energy consumption. Reducing unemployment, poverty, and hunger and more equitable distribution of wealth are other crucial advantages of the proposed solution.

Executing the proposed solution can be considered to help achieve the results of target 5.5 of the fifth goal and is strived at helping to achieve the targets 8.1, 8.2, 8.4, and 8.5 of the eighth goal of Sustainable Development Goals.
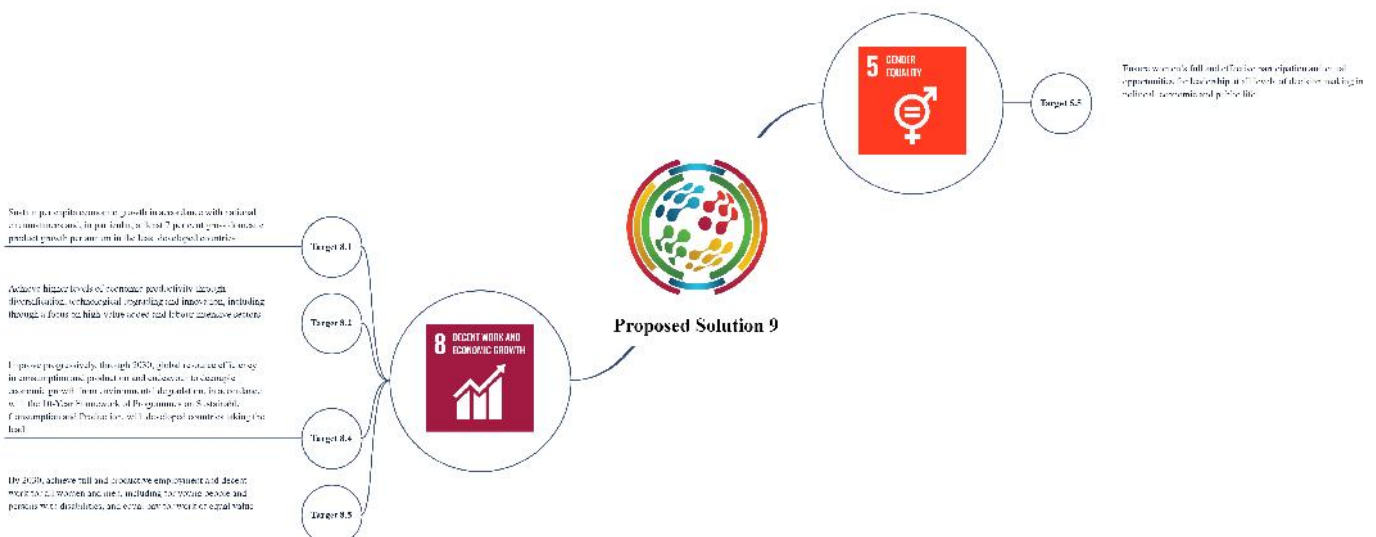
05 SDG Business Model

5.1 Business projects

SDG Value Proposition

Convenience

The SDG business model presents a framework to proceed towards an effortless way of life for achieving efficient, transparent, and reliable environmental solutions by leveraging blockchain technology.

Performance

The business model directs the execution of an array of functions to support sustainable development with technological intervention while supporting human welfare efforts globally.

Customization

The model observes a scope for modifications and upgrades. That will help target a vast goal of harnessing the potential of blockchain technology to address climate change and support UN Sustainable Development Goals in the future.

5.2 Key Stakeholders

Software Developer

SDG has joined hands with one of the world's pioneering blockchain development companies having real-world experience in delivering blockchain products across domains like NFT, metaverse, Defi, DAO, crypto exchange, and wallet, and more.

Platform Manufacturer

Manufacturing Standardization plays a significant role in maintaining the quality, performance, and condition of a manufactured product (tokens in this case). Platform Manufacturer ensures that the platform is standardized with the following features:

- Supports fiat currency and digital currency
  Makes money from exchange rates to keep your investment or trade going
- Embraces digital methods of transactions over outdated methods
- The platform is a well-designed and easy-to-use desktop with an interface compatible with mobile apps

-

Platform Vendors

The platform vendor plays a significant role in controlling the operating system and hardware on which the applications run.

5.3 SDG Customer Segments

General Customer

Any State agency or other entity mentioned in a contract as the party and willing to receive commodities (cryptocurrencies) or contractual services (exchange services) will be a general customer.

Vertical Market

A vertical market will represent a group of companies and customers (dealing in cryptocurrencies) that are all interconnected and have a prominent level of spending power. Customers of the vertical market typically rely on a single service provider.

Global Market

The global market includes stakeholders, customers, and other participants from different regions across the globe.

5.4 SDG's Major Revenue Streams

Profit sharing

Revenue generation in the cryptocurrency business is mainly from the sale of tokens or exchange services along with profit sharing with business partners.

Subscription fee

Subscription fees or transaction fees or gas charges are likely to be paid by the beneficiary party to the organization for availing the rights or privileges of the services rendered.

Product sales

It involves the revenue generated from the sale of SDG Tokens and other products available within the ecosystem.

06 SDG Token & Its Utility

6.1 Introduction

The SDG Token is a blockchain-based solution for impact investing. It represents the positive social and environmental impacts of specific activities, thus playing a significant role in diminishing the SDG's financial gap. The SDG Token provides a 'perfect blended financial solution' by understanding the liquidity risk of impact investments and highlighting the industry's requirement for more robust, dependable, and standardized ways to measure non-financial returns. The SDG Token, being a digital representation of an asset or utility based on blockchain technology, can move society toward more decentralized economies by eliminating intermediaries and integrating smart contracts. These contracts are self-executing, programmable computer codes that define the rules between two or more transacting parties and automatically execute when certain conditions are met without the need for a third party. The exchangeable valuables such as time, the energy produced, ownership, contracts, certificates, vouchers, expertise, commodities, goods, services, loyalty points, memberships, financial instruments, and governmental bonds can be digitally represented by SDG tokens. An algorithm that automatically releases money over time, to control budget and expenses, can also be used to develop flexible pricing mechanisms by fragmenting the tokens into smaller bits. The SDG Token is a medium to incentivize the positive behaviors of sustainability by providing a trustworthy blockchain-based platform, through improved data collection techniques supporting monitoring, reporting, and verification   25.

6.2 Harnessing the potential of blockchain technology to achieve UN SDGs' 17 goals

SDGs	Potential of Blockchain Technology
Goal 1. End poverty in all its forms everywhere	Cryptocurrencies and other blockchain-based tokens enable easier and more secure trading and transactions. (Gear, 2017)
Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	The World Food Program (WFP) already implemented a pilot project in 2017, called Building Blocks. It enabled the transfer of WFP Food and cash through a public Ethereum blockchain with the help of a smartphone app to vulnerable families in Pakistan. The WFP expanded the project to a Syrian refugee camp in Azraq, Jordan to successfully facilitate cash transfers for over 10,000 Syrian refugees through its blockchain payments platform. The implementation of blockchain technology later enabled Syrian refugees to buy food from local retailers using a biometric scan of their eyes, where each transaction was recorded on a blockchain.
Goal 3. Ensure healthy lives and promote well-being for all at all ages	Sharing patient healthcare records through blockchain is more secure and efficient as well. (Gear, 2017)

SDGs	Potential of Blockchain Technology
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Smart contracts, GPS, RFID, and IoT empower the Blockchain to offer transparency, and auditability because tracking people who make donations becomes very easy.
Goal 5. Achieve gender equality and empower all women and girls	Storing documents related to the identification of women or girls who have been trafficked or who have gone missing helps authorities to locate the same.
Goal 6. Ensuring availability and sustainable management of water and sanitation for all	Monitoring, recording, and verifying data collected for water samples would ensure non-tempering and thus discourage malpractices.
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	Blockchain gives the opportunity to invest or produce or sell energy. Solar panels, turbines, CHP, home, or car batteries may help consumers to trade directly in decentralized, transparent, and secure environments through robust distributed ledger technology. (Grosjean, 2017)
Goal 8. Promote sustained, inclusive, and sustainable economic growth, full, and productive employment, and decent work for all	Blockchain technology is a more effective, faster, and cheaper way for international payments. Smart contracts, virtual currency, and distributed ledgers enable new cross-border payment models, thus providing a secure and transparent digital infrastructure for verifying identity and securing property rights. (Pisa, Juden, 2017)
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation	"Small businesses can get ahead, innovate, and build an edge with blockchain transformation by using blockchain-based services as well as creating their apps on top of blockchain – decentralized apps, or DApps. Finally, businesses can already use smart contracts to regulate and govern relationships and agreements with other entities." (Tamar, 2018)
Goal 10. Reduce inequality within and among countries	Secure remote authentication of voters' identity and secure record keeping for vote tracking on the blockchain audit trail helps in maintaining equality (Schlegel, 2017)

SDGs	Potential of Blockchain Technology
Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable	Blockchain technology can do wonders by tapping the power of Smart contracts, GPS, RFID, and IoT in maintaining any integrated smart city with the least time, effort, and resources (Epsom, 2017)
Goal 12. Ensure sustainable consumption and production patterns	Distributed ledger and smart contracts provide transparency and traceability throughout the supply chain. It will ensure that the products are sourced in line with their sustainability claims (Epsom, 2017)
Goal 13. Take urgent action to combat climate change and its impacts	Developing virtual 'Metaverse' platforms with supportive features for immersive interaction could help in providing an environmental conversational platform, beyond the geographical barrier.
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	The power of Smart contracts, GPS, RFID, and IoT on Blockchain labels a unique ID to any product. The relevant audit information can even demonstrate that the fish is caught legally and sustainably (Epsom, 2017)
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Monitoring, verifying, and recording the detailed record at the rural level can help to identify responsible hectares of certified forests and thus can be an alternative solution for tracing provenance (Epsom, 2017)
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels	Maintaining the digital identities of refugees on blockchain promotes the concept of an inclusive society. ID2020 teamed up with Accenture and is looking at rolling out an interoperable, user-owned, and controlled digital identity to its hundreds of thousands of staff. They hope that this initiative will evolve into a standard background check which can be distributed to potential clients using a biometrics system that can manage data on fingerprints and irises. (Cullell, 2018)
Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	The integration of different technologies like Smart contracts, GPS, RFID, and IoT with blockchain empowers automatic authenticated transparency and trust, which enables partnerships to thrive, hence breeding a situation where true collaborative solutions can be born. This has the potential to be a perfect model for establishing productive partnerships. (Woolf, 2017)

07 SDG Tokenomics

The tokenomics of any token decides the economic design of the token and is significant. That is why the tokenomics of the SDG Token is based on the extensive qualitative and quantitative research of a data sample collected from white papers and resources.

- 1% Bounties and airdrops
- 6% Others
- 5% Private Sale
- 35% Public Sale
- 5% Reserves
- 32% Founders
- 6% Executive Team
- 8% Business development and Marketing
- 2% Advisors

Tokenomics parameter	Sample findings	Research findings
Token type	68.7% utility, 31.3% payment	68% utility
Technical standard	94.9% ERC20	56.5–84% ERC20
Standard issue price	Median: 0.10 USD	Median: 0.20–0.30 USD
Standard currency	76.54% USD, 19.75% ETH, 3.7% EUR	–
Currency acceptance	34.44% ETH only, 20% ETH, BTC and other cryptos, 16.67% ETH and BTC, 28.29% fiat and crypto	66% ETH, 10% USD
Private sale	8.16%	36–45%
Public sales duration	Median: 31.5 days	Median: 31 days, mean: 37 days (41 days in 2018)

Tokenomics parameter	Sample findings	Research findings
Total supply	Median: 775 million USD	_
Soft and hard cap	66.3% soft cap, 84.7% hard cap, soft cap is 17.3% of the hard cap	_
Sale quota	Mean: 53.3%	54–60%
Token allocation	55.5% public and private sale, 11.6% reserves, 8.2% team, 8.1% business development and marketing, 3% advisors, 2.9% bounties and airdrops, 11.7% other	_
Use of sale proceeds	38% development, 27% marketing, 14% operations, 6% legal, 15% other (tech., reserves)	_
Capital collected	Mean: 5.97 million USD	Mean 11.5–15.8 million USD Median: 3.8 million USD

08 Technology Stack

The SDG Token is based on a decentralized network and is free from unauthorized access to personal data. So, the data gets distributed over the whole network maintaining transparency, security, and traceability.

8.1 Technology Used

SDG plans to tap the full potential of Cryptocurrency and blockchain technology to raise an ecosystem for attaining SDG's 17 goals. Any digital currency is decentralized and revolves around a set of algorithms and protocols. It supports cryptographically based payment mechanisms, maintaining a medium of exchange, and storing values. Since cryptocurrencies are not regulated or controlled by any government or central authority, they promise new economic, business, and social models. In addition, digital currencies empower distributed ledger technology with efficient transaction processing eliminating the need for any intermediary or third party.

8.2 Ethereum Blockchain

Ethereum is a blockchain-based, decentralized software platform. Being open source, it can easily be customized and used for creating a crypto token. It enables the deployment of smart contracts and decentralized applications (DApps) in insignificant time and without any interference from any intermediary or third party. Inheriting the benefits of the Ethereum blockchain, the SDG token enables transactions with greater security, transparency, speed, and reliability.

8.3 Overview – Ethereum's Architecture

Ethereum is a decentralized mining network and software development platform packed to facilitate the creation of new cryptocurrencies and platforms that share a single blockchain.

Architectural Components of Ethereum

Node/Client	A node, also known as a client, is a device/program that communicates with the Ethereum network.
Block	A block is a package of data that comprises zero or more transactions, the hash of the previous block, and optionally other data.
Miners	Add the block to the Blockchain. Miners are simply nodes in the Ethereum network who find a new block, confirm transactions, and commit new transactions in a block.
Proof of Work (PoW)	Proof of work is an activity that miners perform to write transactions to a new block. It is a mathematical value that serves as proof of having solved a resource and time-consuming computational problem.
Ethereum Virtual Machine	Ethereum Virtual Machine is the decentralized computing platform that forms the core of the Ethereum platform.
Smart Contract	Set of executable functions directing a line of code that executes automatically when the predetermined terms and conditions are fulfilled, eliminating the need for an intermediary or third- party.
Gas	Gas refers to the pricing value needed to successfully perform a transaction or execute a smart contract on the Ethereum Blockchain platform.
Gas Limit	The gas limit represents the maximum amount of gas you are willing to pay for a smart contract transaction execution.
Mining Pool	A mining pool is simply a group of miners that work together to mine blocks for the Ethereum network.
Main-net	A main net is the Ethereum Blockchain network.

09 SDG Team

Akram Tofighy
CEO

Reza Ghanbari Maman
CTO

Ramin Saberi
COO

Hassan Nazari
CBO

Farzam Tofighi
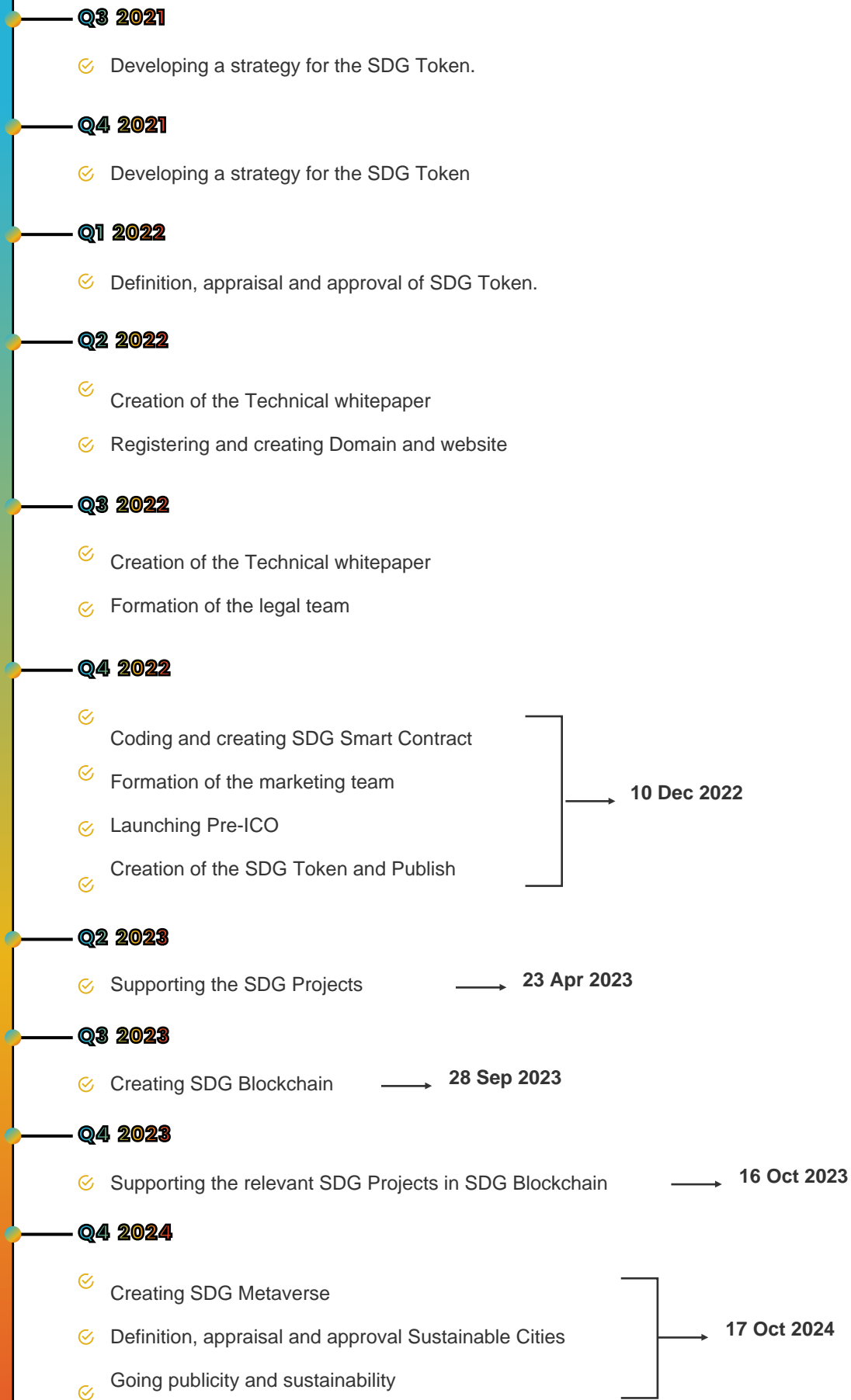Financial Director

Leyla Ghanbari
R&D Manager

Foroozan Rahbar
Training & Development   Manager

10 Roadmap

Q3 2021

- Developing a strategy for the SDG Token.

Q4 2021

- Developing a strategy for the SDG Token

Q1 2022

- Definition, appraisal and approval of SDG Token.

Q2 2022

- Creation of the Technical whitepaper
- Registering and creating Domain and website

Q3 2022

- Creation of the Technical whitepaper
- Formation of the legal team

Q4 2022

- Coding and creating SDG Smart Contract
- Formation of the marketing team
- Launching Pre-ICO
- Creation of the SDG Token and Publish

10 Dec 2022

Q2 2023

- Supporting the SDG Projects ⟶ **23 Apr 2023**

Q3 2023

- Creating SDG Blockchain ⟶ **28 Sep 2023**

Q4 2023

- Supporting the relevant SDG Projects in SDG Blockchain ⟶ **16 Oct 2023**

Q4 2024

- Creating SDG Metaverse
- Definition, appraisal and approval Sustainable Cities
- Going publicity and sustainability

17 Oct 2024

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