



Project Abstract

In 3-5 sentences, what problem are you trying to solve? (The project abstract may be used for the winner's announcement)

Title: LSG DAOs - Cementing Democratic Decentralisation In Blockchain Governance

- Sub Title: Conceptualise a blockchain governance framework by integrating the best practices from local self-government institutions.

The Abstract:

Good Governance in blockchain systems is instrumental in guaranteeing the sustainability and integrity of the technology in the long run. Primarily this concept is bifurcated into governance of the infrastructure (which covers the processes and stakeholders within the blockchain) and governance by the infrastructure (where blockchain regulates the actions and behavior). Despite the presence of several governance theories, the right balance between technical and social means of governance is elusive. Even DAOs, which serve as the best example of decentralised governance in blockchain, have their own setbacks in decision-making and voting per say. In particular, a hybrid approach that exercises due diligence in adopting on-chain and off-chain governance on a case-to-case basis is required.

This project proposes a framework through the lessons from one of the successful models of democratic decentralisation in India, the local self-governance institutions or LSGIs. Referred to as the best examples of grassroot governance in the world's biggest democracy, India, the Local Self-Government institutions (LSG) of rural (the Panchayats) and urban areas (Municipalities) follow a bottom-up approach by serving as regulators, service providers, welfare agents, and facilitators of development. Being safeguarded by constitutional laws, these institutions are presumed to be the government closest to the common people, where local knowledge and local interests are weighed in the decision-making process.

The LSGs are primarily built on the principles of 3Fs, that is, Funds, Functions, and Functionaries. Some of the successful programs implemented by LSGIs include

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), National Social Assistance Programme, Pradhan Mantri Gram Sadak Yojana for establishing all-weather roads in rural areas, the National Rural Livelihoods mission, and Pradhan Mantri Awas Yojana providing decent housing facilities for all households to name a few. As per Reserve Bank of India's report the urban local bodies in India alone contribute to around 60% GDP of the country. Despite their immense contribution the LSGs confront challenges in the complete realisation of the 3Fs, limiting their fiscal powers and autonomy.

With the present era engulfed in geopolitical tensions, and entitlements to the needy and underdeveloped nations revoked by centralised agencies, the LSGIs are the demonstrated solutions to decentralised/grassroots governance

Objectives

What are you hoping to accomplish with this grant? How do you define and measure success for this project?

The project aims:

- Propose an integrated sustainable governance framework for public permissionless blockchains based on the learnings of successful LSG institutional models. Study the delineation of the 3Fs between various sections of the local government. Prepare a research report/article that provides deeper insights into them and the lessons learned, and recommend some of the identified best practices for on-chain protocol governance.
- Redefine the tokenomics in governance tokens for DAOs by introducing reforms to the voting rights and privileges inspired from the democratic decentralisation
- To bolster the accountability and transparency in LSGs and to alleviate the bottlenecks in their existing organisation structure propose on-chain solutions including real-time analytics on the devolution of 3Fs.

Outcomes

How does this project benefit the greater Ethereum ecosystem?

Enhance On-chain Governance: The voting mechanism for LSGs in different tiers is differently constituted based on the portfolio and areas of governance. Participatory budgeting and social auditing are some innovative measures that have been implemented. The DAOs can imbibe the best practices from the above mode to arrive at a better consensus and overcome decision-making challenges.

Grant Scope

What are you going to research? What is the expected output?

- Conduct a preliminary study on successful LSGs who have realised the complete devolution of 3Fs.
- Prepare a comprehensive research article that covers the study and summarises the learning and their potential for enhancing on-chain governance.
- Explore the domains where LSGs are yet to be empowered. Facilitate technology integration through blockchain for the identified domains and perform a comparative analysis.

Related Work

What existing research is relevant to your project?

What is the specific gap your research is addressing within this context?

Despite the presence of several governance theories, there exists gaps in longitudinal research on open permissionless blockchains. In particular these blockchain platforms suffer from boundary problems, meaning the challenge in identifying all the relevant actors of the system thereby affecting the governance setup [1].

The DAOs built from public permissionless blockchains are observed to have accountability issues[2]. Studies emphasize the need to redefine the governance setups in DAOs that can obviate the recurrence of infamous incidents such as The DAO attack.

The above studies emphasise the importance of a sustainable governance framework that comprehensively addresses the governance challenges of public permissionless

blockchain. Our proposed solution will include a layered framework that encompasses components for enhancing governance of blockchain and governance by blockchain.

Project Team

How many people are working on this project?

Please list their names and roles for the project as well as how many hours per month will each person work on this project?

- Dr. Adarsh S – Research Lead I
[Google Scholar](#) | [LinkedIn](#)
- Mr. Ananthan R – Team Lead
[GitHub](#) | [LinkedIn](#)
- Ms. Sivadas Neelima – Research Lead II
[GitHub](#) | [LinkedIn](#)
- Mr. Mobin M – Lead Developer
[GitHub](#) | [LinkedIn](#)
- Ms. Sumi Maria Abraham – Theoretical Analysis
[GitHub](#) | [LinkedIn](#)

Background

Give us a bit of info and include relevant links, if available! Please provide other projects or research papers (ideally public and/or open source), engagements or other types of proof that your team has the necessary experience to undertake the project you are applying for.

Any links for us to review? E.g. research papers, blog posts, etc.

We are a pioneer blockchain training institute in India with 8+ years of experience in training and development. As a center of excellence in blockchain, our institute have achieved the following milestones:

- Knowledge Partner with LF Decentralised Trust, R3 Consortium Corda
- Empowered learners from 66+ countries with high quality blockchain courses
- Conceived award winning blockchain solutions including Immunochain , Certichain, Agrichain, Sign A Doc
- Proud recipients of IET India Future Tech Award 2022 and the Chief Minister's Award for Innovations in Public Policy (2020) in Kerala.
- Some of the top government institutions who have benefitted from our blockchain programs include IIT-Kanpur, NPCI, DRDO, IMT-Dubai, BEL, Sony India, etc.
- Secured grants from Ethereum Ecosystem Support Program

Methodology

How do you plan to achieve your research objectives?

The research will focus on different phases

Phase 0: Preliminary study that includes consulting the LSG institutions , referring related literatures and prepare a detailed documentation on their portfolios and governance mechanisms

Phase 1: With collected details preparing a research article or report that elaborates the findings of Phase 0, along with incorporating the lessons learnt to the on chain protocol governance

Phase 2: Explore the domains/areas where blockchain solutions can be a gamechanger in enhancing the accountability and transparency of LSGs

Phase 3: Prepare a framework of an LSG DAO that addresses the pilferages in democratic decentralisation

Timeline

Please include a brief explanation on the milestones/roadmap, along with expected deliverables. Also outline how the funds will be used for the research project and or members of the team.

Milestone 1: title

Budget: based off hourly rate and number of hours

Number of hours (roughly)

summary of work, subtasks

Milestone 1: Preliminary Study

Budget: 3550 USD

Number of Hours: 120 hours

Summary: This phase includes performing extensive analysis of local government bodies that have excelled in performance indicators , documenting the information.

Milestone 2: Prepare a Research report/ Article on the findings and propose recommendations for bolstering on-chain protocol governance

Budget: 2150 USD

Number of Hours: 150 hours

Summary: The observations, notes and the inferences are tabled in the form of a research article or report.

Milestone 3: Design a comprehensive framework for LSG DAOs that forms an exemplar to the future of democratic decentralisation

Budget: 4500 USD

Number of Hours: 250 hours

Summary: This phase includes development and testing of the framework in a simulated environment.

Milestone 4: Research Paper outlining the framework

Budget: 5250 USD

Number of hours: 220 hours

Summary: This is the final phase of submitting the framework for pilot studies or experiments.

Budget

Requested grant amount and how this will be used

Please provide an requested amount and outline of how the grant will be used. A detailed budget proposal would be helpful and some items you could include are:

- Principal Researchers Costs
- Other Staff Costs
- Hardware Costs
- Software Costs
- Data Collection Costs
- Indirect Costs

Sr.No	Budget details	Cost
1	Hardware Costs	3500 USD
2	Software Costs	3550 USD
3	Contingency Costs	2800 USD
4	Staff Costs	3200 USD
5	Miscellaneous Charges	2400 USD
	Total	15450 USD

References:

[1]. Laatikainen, G., Li, M., & Abrahamsson, P. (2023). A system-based view of blockchain governance. *Information and Software Technology*, 157, 107149.

[2]. Rikken, O., Janssen, M., & Kwee, Z. (2019). Governance challenges of blockchain and decentralized autonomous organizations. *Information Polity*, 24(4), 397-417.