SDG BLOCKCHAIN ACCELERATOR

ROADMAP TEMPLATE

Challenge Definition

This section sets the foundation for understanding the development problem your solution aims to address. Be clear and concise, focusing on the problem itself, the environment in which it exists, and the intended outcomes of addressing it.

UNDP Challenge Summary

(Briefly describe the real-world development challenge being addressed. Provide a summary of the development challenge submitted by the UNDP Country Office. Focus on the nature of the problem rather than the solution. This should be written in a way that is easily understandable to external stakeholders. Please include any relevant data and statistics that highlight the urgency and significance of this challenge.)

Mauritius, like many Small Island Developing States (SIDS), faces a dual challenge of high energy costs and climate vulnerability. The country is heavily reliant on imported fossil fuels, which exposes it to volatile global energy prices and undermines energy security. At the same time, Mauritius has committed to achieving 60% renewable energy in its electricity mix and reducing greenhouse gas emissions by 40% by 2030.

A critical sector impacted by these challenges is education. National schools—comprising more than 1,200 institutions across pre-primary, primary, and secondary levels—consume large amounts of electricity for lighting, equipment, and basic infrastructure. Current expenditure on electricity places a heavy financial burden on schools, diverting resources away from their primary mission of providing quality education.

This dependency on fossil-fuel electricity also contributes to the country's overall carbon footprint, putting pressure on Mauritius' climate commitments and sustainable development goals (SDGs). Without affordable renewable energy access, schools remain vulnerable to rising costs, energy insecurity, and missed opportunities to embed sustainability into the education system.

The development challenge is therefore twofold:

1. Economic – Schools face high and unsustainable electricity costs, limiting their ability to invest in educational resources, digital tools, and infrastructure.
2. Environmental – The continued reliance on fossil fuels in the education sector undermines climate action goals and increases vulnerability to global energy shocks.

Addressing this challenge is urgent. By equipping schools with renewable energy solutions, Mauritius can reduce operating costs, improve resilience, and create a powerful platform for

sustainability education—helping students, teachers, and communities adapt to a changing climate.

Local Context

(Why does this challenge matter? Describe the setting and key stakeholders. Explain why this challenge is important in your specific country or regional context. Describe the affected communities or sectors, any existing efforts to solve the issue, and the roles of key stakeholders involved (e.g., government, private sector, civil society.)

Mauritius, as a Small Island Developing State (SIDS), is on the frontline of climate change impacts, with its energy security, economy, and communities vulnerable to global fossil fuel price fluctuations. Education is one of the sectors most affected: schools across the island face high and rising electricity costs, which limit resources for digital tools, infrastructure, and student support. These costs divert critical funding away from the core mission of delivering quality education (SDG 4).

At the same time, Mauritius has set ambitious renewable energy and climate targets: achieving 60% renewable energy in the national electricity mix by 2030 and reducing greenhouse gas emissions by 40%. Schools are uniquely positioned to contribute to this transition — both as large energy consumers and as spaces where a culture of sustainability can be nurtured among the next generation.

Key Stakeholders in the Challenge

- The Government of Mauritius – Ministries of Education, Energy & Public Utilities, and IT/Innovation are directly responsible for ensuring that education and energy strategies align with national commitments.
- Central Electricity Board (CEB) – Operates renewable energy schemes (e.g., Gross Metering, MSDG, Solar PV for Educational Institutions) that schools could benefit from but often lack upfront financing to access.
- Schools & Communities – More than 1,200 schools serve as both beneficiaries and change agents; school administrators, teachers, parents, and students are directly impacted by high costs and limited resources.

- Mauritian Diaspora & Local Investors – Represent a potential pool of supporters and funders motivated by national pride, sustainability, and impact investing.
- Private Sector & Installers – Solar PV installers and technology providers can supply and maintain renewable systems, while corporate sponsors can contribute through CSR initiatives.
- Development Partners (e.g., UNDP, GCF) – Provide technical, financial, and strategic support to scale solutions that combine climate action (SDG 13) with clean energy (SDG 7) and education (SDG 4).

Existing Efforts

Mauritius has already established a regulatory framework for crowdfunding (FSC Crowdfunding Rules 2021) and for virtual assets (VAITOS Act 2021), as well as renewable energy incentive schemes through the CEB. However, despite these enabling conditions, schools continue to face financial barriers that prevent them from adopting solar solutions.

Why It Matters Now

This challenge matters because it sits at the intersection of education, climate resilience, and inclusive finance. Without intervention, schools will remain locked into high energy expenditures, limiting their capacity to innovate and support students in an increasingly digital learning environment. By enabling affordable access to clean energy through innovative financing, Mauritius can not only reduce costs for schools but also:

- Strengthen climate resilience in a vulnerable island nation.
- Advance national energy and emissions targets.
- Mobilize communities, diaspora, and private investors in collective action.
- Transform schools into living labs for sustainability, embedding renewable energy awareness into education.

In short, solving this challenge is critical to securing a greener, more resilient, and more inclusive future for Mauritius.

Relevance to UNDP CO Priorities and Resource Mapping

(How does this project align with the overall objectives of the UNDP Country Office? Is it building on an existing initiative, or is it a new standalone project? If the project builds on an existing initiative, please provide further details, including a description of the original project, its donors,

scope, scale and any other relevant information. Additionally, is there any co-financing available, whether in the form of funding, human resources, or other types of project support?)

Alignment with UNDP Country Office Priorities

This project is fully aligned with the UNDP Mauritius Country Programme Document (2024-2028), which prioritizes:

1. Socioeconomic Transformation – supporting inclusive, green, and digital transitions.
2. Environmental Sustainability and Resilience – accelerating renewable energy adoption, climate change mitigation, and innovative financing.

The decentralized crowdfunding for solar energy in schools directly contributes to these priorities by:

- Advancing renewable energy transition (SDG 7), in line with national goals of 60% renewable energy in the electricity mix by 2030.
- Reducing carbon emissions (SDG 13), contributing to Mauritius' nationally determined contributions (NDCs).
- Supporting quality education (SDG 4) by lowering school electricity costs and enabling reinvestment in teaching and digital resources.
- Leveraging digital innovation through blockchain-based crowdfunding, aligning with UNDP's role in driving digital transformation and innovative financing.

This project also strengthens UNDP's integrator role by linking climate action, education, community empowerment, and digital finance in a single initiative.

Building on Existing Initiatives

This is not a standalone effort but builds on existing UNDP-supported initiatives, including:

- UNDP's renewable energy portfolio in Mauritius, such as the installation of grid-scale battery energy storage and support for small-scale solar PV expansion.
- Digital transformation programmes, where UNDP has already supported government e-services, data systems, and innovative financing mechanisms.
- Climate resilience and circular economy programmes, including capacity-building for schools, SMEs, and communities to engage in sustainable practices.

The project extends these efforts into the education sector, testing blockchain-enabled crowdfunding as a scalable financing model that can later expand to other public infrastructure (health facilities, SMEs, community buildings).

Resource Mapping & Co-Financing

The project will leverage multiple forms of support and partnerships:

- UNDP Core & Non-Core Resources: Technical assistance, accelerator lab support, and digital transformation expertise.
- Government of Mauritius (Cost-Sharing): As the largest bilateral contributor to UNDP, government co-financing through cost-sharing for green and digital transition programmes is anticipated.
- Development Partners: Potential co-financing from the Green Climate Fund (GCF), Global Environment Facility (GEF), and bilateral partners (EU, Japan, AfDB, World Bank) already engaged in Mauritius' climate and renewable energy programmes.
- Private Sector & Civil Society: Contributions via corporate social responsibility (CSR) funds, impact investors, and the Mauritian diaspora, mobilized through the crowdfunding platform itself.
- Human Resources: Support through UNDP's Accelerator Lab, national and international UN Volunteers, and local implementing partners such as solar PV installers and FinTech providers.

This project directly builds on UNDP's ongoing climate and digital transformation work in Mauritius, while introducing a novel financing mechanism to mobilize additional resources for renewable energy in schools. It leverages co-financing from government, international partners, and private sector actors, making it both sustainable and scalable.

Expected Impact (from CO perspective)

(Outline the intended outcomes from the Country Office's perspective. What would a successful pilot enable (e.g., policy change, improved service delivery, community empowerment, systems improvement, or scaled innovation)? Keep the focus on measurable or meaningful change.)

From the UNDP Country Office perspective, a successful pilot of the decentralized crowdfunding platform for solar energy in schools will generate measurable outcomes across policy, systems, service delivery, and community empowerment, while also paving the way for scalable innovation.

1. Policy Change & Enabling Environment

- Provide evidence for innovative financing models (blockchain, tokenization, crowdfunding) to be considered in national renewable energy and education policies.
- Inform Energy & Education Ministries and the Financial Services Commission on regulatory sandboxes, ensuring safe adoption of decentralized finance and compliance with the Crowdfunding Rules (2021) and VAITOS Act (2021).

- Contribute to UNDP's role in advising the government on integrating digital and green financing mechanisms into broader public service and infrastructure strategies.

2. Improved Service Delivery in Education

- Lower electricity costs in pilot schools, enabling budget reallocation to teaching, digital inclusion, and student support.
- Provide reliable clean energy supply, strengthening the resilience of schools to power fluctuations.
- Showcase schools as living labs for sustainability, embedding climate education and demonstrating renewable energy systems in practice.

3. Community Empowerment & Inclusion

- Empower parents, diaspora, and citizens to directly invest in their schools, strengthening trust and community ownership.
- Enhance inclusion of women, youth, and vulnerable groups by providing access to small-scale, fractional investment opportunities, in line with UNDP's focus on inclusive finance.
- Create a sense of shared responsibility and pride in national climate and education goals.

4. Systems Improvement & Institutional Strengthening

- Develop a transparent, blockchain-based impact dashboard, improving accountability in public finance and renewable energy systems.
- Strengthen CEB's capacity to streamline power purchase agreements (PPAs) with automated smart contracts, reducing administrative burden and delays.
- Enable the government to monitor contributions and impact in real-time, supporting evidence-based reporting on SDGs 4, 7, and 13.

5. Scaled Innovation & Regional Leadership

- Demonstrate proof-of-concept for scalable digital finance solutions, adaptable to other sectors (e.g., health facilities, SMEs, community infrastructure).
- Position Mauritius as a regional leader in SIDS for blending blockchain, impact investing, and climate action, contributing to South-South cooperation and knowledge sharing.
- Provide a replicable model for Seychelles and other SIDS, reinforcing the Mauritius & Seychelles Multi-Country Office's role as an innovation hub.

From the CO's perspective, this pilot is expected to reduce school energy costs, empower communities, strengthen governance, and open the door to national policy shifts on innovative climate finance — while positioning Mauritius as a global example of SDG-linked digital innovation.

Target SDGs and SDG Indicators

(List up to three specific Sustainable Development Goal (SDG) indicators that your challenge and proposed solution will directly contribute to. Be specific and focus on the indicators your work actively addresses, rather than those it only indirectly supports.)

SDG 4 – Quality Education

- Indicator 4.a.1: *Proportion of schools with access to electricity, the Internet for pedagogical purposes, and basic infrastructure.*
    - Relevance: By financing solar energy systems, schools gain reliable and affordable electricity, enabling reinvestment in digital learning tools and infrastructure.

SDG 7 – Affordable and Clean Energy

- Indicator 7.2.1: *Renewable energy share in the total final energy consumption.*
    - Relevance: The project increases renewable energy penetration in Mauritius' national grid through school-based solar installations.

- Indicator 7.1.1: *Proportion of population with access to electricity.*
    - Relevance: Ensures reliable electricity supply in schools, reducing outages and energy insecurity.

SDG 13 – Climate Action

- Indicator 13.2.2: *Total greenhouse gas emissions per year.*
    - Relevance: Each solar installation reduces reliance on fossil fuels, cutting CO_2 emissions in line with Mauritius' NDC commitments.

- Indicator 13.3.1: *Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in policies, curricula, teacher education and student assessment.*
    - Relevance: Schools become sustainability demonstration sites, embedding climate action into the education system.

User & Problem Mapping

Understanding the users and stakeholders affected by the challenge is essential for building impactful and context-aware solutions. This section helps articulate who the primary users are, what they aim to achieve, and which other actors are involved or impacted.

Primary User Persona

(Describe the key user or beneficiary of your solution. Include relevant characteristics such as role, environment, goals, and challenges they face. This helps keep the solution user-centered.)

The primary users of the Decentralized Crowdfunding Platform are Investors and Mauritian National Schools.

Investor Persona:

Role: Individuals or organizations (local and global, including the Mauritian diaspora) interested in contributing funds to renewable energy projects.

Environment: Engages with online platforms, potentially familiar with digital transactions, and seeks transparent and traceable investment opportunities. May include diverse income groups and those new to cryptocurrency.

Goals:

- To easily browse and select specific school projects to fund.
- To make a secure and traceable investment using a Cardano wallet.
- To understand the potential return on investment (ROI), such as financial returns based on feed-in tariffs.
- To receive a verifiable proof of ownership (e.g., token) for their fractional stake.
- To comply with necessary identity verification (KYC/AML) requirements to participate legally.
- To independently verify their transactions on the blockchain.
    - To view indicative returns and statements for their investments.
- Challenges They Face: Needs a simple and user-friendly interface, assurance of transparency and security, and clear communication of investment terms. May need multi-language support (English and French).

▪ Mauritian National Schools Persona:

- Role: Educational institutions (pre-primary, primary, secondary, tertiary) in Mauritius, including school administrations, educators, and students.

- Environment: Facing significant electricity costs and financial barriers to implementing large-scale renewable energy projects.
- Goals:
    - To reduce monthly electricity expenses and achieve long-term financial savings.
    - To invest savings into enhancing educational resources, infrastructure, and digital tools.
    - To have their solar project proposals accurately listed on the platform to attract funding.
    - To contribute to lowering their carbon footprint and align with national renewable energy targets.
    - To integrate solar PV systems into the curriculum for educational opportunities and foster environmental awareness.
- Challenges They Face: High upfront capital costs for solar installations, traditional funding models are insufficient for rapid scaling, and navigating grid integration schemes.

User Story

(Frame the user needs in a simple narrative format that links the user, their goal, and the value the solution delivers. Use the format: "As a [user], I want to [goal], so that [value].")

1. Parents
- *As a local parent, I want to invest a small, affordable amount in my child's school solar project, so that I can contribute to their education and a sustainable future while also reducing costs or benefiting from returns.*

2. Mauritian Diaspora
- *As a member of the Mauritian diaspora, I want to easily and transparently invest in a local school's solar project, so that I can support my home country's development from abroad without major financial hurdles.*

3. Impact Investors
- *As an impact investor, I want to see a clear breakdown of how my funds are used and the tangible environmental impact, so that I can align my portfolio with my values and track measurable results.*

4. School Administrators
- *As a school administrator, I want a simple, user-friendly platform to track solar system performance and financial savings, so that I can demonstrate the project's value to the school community and stakeholders.*

5. Central Electricity Board (CEB)
- *As a CEB representative, I want the platform to provide a streamlined, automated process for managing power purchase agreements (PPAs) and solar production data, so*

that I can efficiently integrate projects into the national grid.

6. **Regulators**

- *As a regulator, I want a secure and verifiable platform ensuring compliance with national laws (KYC/AML, VAITOS Act), so that I can maintain market integrity and protect investors.*

7. **Government of Mauritius**

- *As a government representative, I need access to a dashboard that shows total funds raised, project completion rates, and environmental impact, so that I can monitor progress, ensure compliance, and report on SDG and renewable energy targets.*

Key Stakeholders/Partners

(Please list all the partners involved in this project. List all relevant parties who will interact with, benefit from, or influence the solution (this may include government agencies, NGOs, community members, or tech partners.)

1. Government & Regulatory Bodies

- Ministry of Education, Tertiary Education, Science and Technology (MoE) – Oversees schools, approves participation, ensures educational alignment.
- Ministry of Information Technology, Communication & Innovation (MITCI) – Provides digital infrastructure support and policy alignment.
- Ministry of Energy & Public Utilities – Ensures alignment with national renewable energy strategies.
- Central Electricity Board (CEB) – Key utility partner for Power Purchase Agreements (PPAs), grid integration, and tariff schemes.
- Financial Services Commission (FSC) – Regulates crowdfunding activities (Financial Services Crowdfunding Rules 2021).
- Bank of Mauritius & Economic Development Board (EDB) – Provide oversight, including Regulatory Sandbox Authorisation (RSA) for blockchain/FinTech pilots.

2. International & Development Partners

- United Nations Development Programme (UNDP) Mauritius & Seychelles – Lead development partner, providing technical, financial, and strategic support.
- Green Climate Fund (GCF) – Potential co-financier through climate resilience and renewable energy projects.
- Other UN Agencies (e.g., UNICC, ITU, UNEP) – Support in digital innovation, sustainability, and regulatory frameworks.

3. Schools & Education Community

- National Schools (Primary, Secondary, Pre-Primary) – Direct beneficiaries of solar installations and reduced energy costs.

- School Administrators & Teachers – Manage implementation, track savings, and use systems for teaching sustainability.
- Students & Parents – End beneficiaries; students gain learning opportunities while parents can invest in school projects.
- Parent-Teacher Associations (PTAs) – Mobilize local community support and ensure accountability.

4. Investors & Donor Community

- Mauritian Diaspora – Key funding contributors, motivated by national development and emotional connection.
- Local & Global Impact Investors – Interested in measurable social/environmental returns (carbon reduction, SDG alignment).
- Corporate Sponsors / CSR Programs – Potential contributors aligned with renewable energy and education goals.
- Community Members & Citizens – Small-scale funders empowered through fractional ownership (tokenization).

5. Technology & Implementation Partners

- Socious Fund Development Team – Leading blockchain-based crowdfunding platform developer.
- Blockchain Technology Providers – Support tokenization, smart contracts, and compliance with VAITOS Act.
- Approved Solar PV Installers – Certified by CEB for design, installation, and maintenance.
- FinTech / Payment Gateway Providers – Enable secure, multi-currency, and global transactions.
- Cybersecurity & Compliance Experts – Ensure data protection, KYC/AML, and regulatory alignment.

6. Oversight & Governance

- Public-Private Governance Body / Foundation – Suggested as a joint oversight mechanism with MoE, CEB, UNDP, and independent trustees to ensure transparency, trust, and sustainability.

Solution Overview

To develop a customizable, open-source crowdfunding and investment platform tailored to enable UNDP Mauritius to raise funds for solar panel installations in government schools. This

platform is built on Cardano for transparency and low-cost transactions with a modular design for easy customization and scalability.

Solution Summary

Our Solution will provide the following features:

- *Crowdfunding platform for solar panel installations in schools (pilot: 5 schools).*
- *Global accessibility with KYC/AML compliance.*
- *Simple user experience for diverse income groups and diaspora.*
- *Scalability to public buildings and private sectors.*
- *Transparent impact reporting (energy savings, CO2 reduction).*
- *Impact Dashboard (Basic)*

Core Functionalities

1. *Crowdfunding Platform:*

- *Investment Selection: Choose specific schools for investment.*
- *Tokenization: Fractional solar asset ownership via Cardano blockchain.*
- *ROI Options: Feed-in tariff (bill deductions) or financial returns (20 years).*
- *User Interface: Simple, multi-language (English, French), responsive design.*
- *Customization: Configurable school lists, investment tiers, and branding.*

2. *Global Accessibility & Compliance:*

- *Global Access: Open to international investors, with multi-currency display.*
- *KYC/AML: Integrated verification, compliant with Mauritius' regulations.*
- *Regulatory Sandbox: Supports pilot phase compliance.*
- *Anonymity: Balances transparency with Mauritius' Data Protection Act.*
- *Customization: Adjustable KYC levels, compliance reporting templates.*

3. *Wallet & Scalability*

- *Wallet Integration: Supports Cardano wallets (e.g., Yoroi) and Ministry of IT's super app.*
- *Scalability: Modular architecture for expansion to public buildings and SMEs.*
- *Open-Source: for CEB/Ministry of IT to customize.*
- *Customization: Configurable wallet connectors, API endpoints for super app.*

Tech Stack Overview

Frontend:

- Go 1.24.1 with Gin web framework
- Hot reload development using Air

Frontend:

- React with Vite for build tooling and development
- Cloudflare for deployment and CDN

Database & Storage:

- PostgreSQL with golang-migrate for migrations
- Google Cloud Storage for file uploads
- SQLX for database queries

Message Queue & Workers:

- NATS for async job processing
- Background workers via github.com/socious-io/gomq

Authentication & Security:

- JWT tokens with golang-jwt/jwt/v5
- Custom auth service via Socious ID: github.com/socious-io/goaccount
- CORS middleware and security headers

Payment Integration:

- Stripe for fiat payments
- Cardano blockchain support
- Multi-currency handling via github.com/socious-io/gopay

Testing:

- Ginkgo/Gomega for BDD-style testing
- Test coverage in /tests directory

External Services:

- Google Cloud Platform (storage, monitoring)
- Discord integration for notifications
- Multiple payment processors (Stripe, blockchain)

Development & Deployment:

- Docker Compose for local dependencies
- Configuration via YAML files
- SQL migrations with version control
- Cloudflare for frontend hosting and performance
- The architecture separates concerns with distinct layers

Cardano-Specific Elements

(Describe how your solution leverages the Cardano blockchain (e.g., use of verifiable credentials (VCs), token minting, Plutus smart contracts, metadata tagging, etc.)

Our solution leverages the Cardano blockchain for secure, transparent crypto payments and future on-chain enhancements, while integrating Hyperledger Identus for Self-Sovereign Identity (SSI) verification to ensure privacy-compliant user onboarding. In the MVP phase, Cardano's capabilities are primarily used for payment processing, with plans for expanded features post-pilot.

- **Crypto Payments**: Users can make fractional investments (e.g., starting at MUR 500 equivalent in ADA or Cardano-native tokens) via wallet integration (e.g., Yoroi or Nami). Transactions are processed on the Cardano mainnet for low fees and high security, with metadata tagging to label contributions (e.g., "Solar Project: Rose Hill School, Amount: 10 ADA") for traceability. This enables diaspora users like Anil to invest seamlessly from abroad, aligning with SDG 7 (clean energy) by funding solar installations.
- Verifiable Credentials (VCs) Integration: Combined with Hyperledger Identus SSI, Cardano's Atala PRISM framework (or compatible VCs) will verify user attributes (e.g., age, location) without storing PII, supporting Mauritius Data Protection Act compliance. Users present VCs from their SSI wallet during login or investment, ensuring anonymous aggregation for SDG 5 (gender equality) metrics (e.g., % women investors).
- **Future Token Minting and Smart Contracts**: Post-MVP, we plan to mint native Cardano tokens (e.g., SOLAR tokens) representing fractional solar ownership using Plutus smart contracts for automated fund collection and manual-to-automated airdrops upon project funding. This will include UTxO-based state changes for transparent distribution, reducing CO_2 offsets (SDG 13) via verifiable on-chain records. Metadata will tag tokens with impact data (e.g., "CO_2 Offset: 0.5 tons").

In the current off-chain MVP, Cardano handles only payments (simulated for testing), with Hyperledger managing SSI verification. Full on-chain rollout will enable Plutus contracts for end-to-end decentralization.

Prototype Plan (Sprint-Based)

This section outlines your team's rapid prototyping plan. The goal is to build a functional and demonstrable version of the solution within 10 working days, with user feedback integrated.

Prototype Goal

Our team aims to build and validate a clickable prototype of a decentralized crowdfunding platform that demonstrates how parents, diaspora, investors, and schools can transparently fund solar installations in Mauritian national schools. The prototype will showcase:

- Core crowdfunding functionality (viewing projects, contributing funds, tracking progress).
- Role-based dashboards for key users (Admin, School, CEB, Installer, Government / Regulator).
- Transparency features such as tokenization, transaction traceability, and progress reporting.
- Basic compliance workflows (KYC/AML checks, project approvals).

The goal is to validate usability, user journeys, and stakeholder value propositions in a focused sprint, ensuring the prototype links directly to the broader MVP vision of a scalable, blockchain-enabled crowdfunding platform for solar energy in schools

Expected Outputs

- *One working interaction (e.g., VC issuance, token minting)*
- *On-chain or hashed output with SDG metadata*
- *User interface (form, display, interaction)*
- *Stakeholder feedback (minimum 3 sessions)*

1. One Working Interaction
    - A functional crowdfunding flow (e.g., selecting a school solar project → making a contribution → receiving confirmation).
    - Demonstrates the end-to-end user journey for at least one key persona (parent, diaspora investor, or school admin).

2. On-Chain or Hashed Output with SDG Metadata
    - Record of a contribution (e.g., token issuance, transaction hash, or proof-of-contribution).
    - Includes linked SDG metadata (e.g., SDG 7: Affordable & Clean Energy, SDG 13: Climate Action, SDG 4: Quality Education).

3. User Interface (Form, Display, Interaction)

- Demo-ready UI with role-based dashboards (Admin, School, Investor, CEB, Government/Regulator).
- Interactive elements: funding progress bar, project details, token/impact display, and simple approval flows.

4. Impact Dashboard (Basic)

    - Visual indicators (progress bar, CO_2 savings, funds raised, number of investors) to validate transparency and user engagement.

5. Stakeholder Feedback (Minimum 3 Sessions)

    - Conduct at least three demo/ feedback sessions with:

        - Government/regulators (MoE, CEB, FSC/EDB).
        - Beneficiaries (school administrators, teachers, parents).
        - Investors/diaspora or corporate/impact funders.

    - Collect structured feedback on usability, compliance, and perceived value.

Sprint Timeline

(Break down the 10-day sprint into tasks and outcomes. Use this as a working plan for the team to stay aligned and focused. The table below is just an example. Please feel free to adapt the tasks and outcomes based on your solution's specific needs and development approach.)

Day	Description	Outcome
1	Define scope, user personas, and SDG indicators (e.g., funds raised, CO_2 offsets); review white-label inspirations (fund.socious.org, lofty.ai).	Scope document and SDG KPIs finalized; team aligned on MVP features (project listings, investment tiers, dashboard).
2	Map user journeys and wireframes (e.g., login/guest, "Explore" button, tier cards); outline interactions for personas	Wireframes and user flow diagrams ready; simple login and navigation sketched.

3	Implement UI for Homepage (hero with "Explore," project cards) and Project Details (tier cards); use preferred tools (e.g., React/Tailwind).	Frontend basics in place: Responsive pages with UNDP branding, mock data for projects/metrics.
4	Add simulated payment integration (Cardano wallet mock, fiat placeholder) and Hyperledger Identus SSI for privacy (login/VC verification).	Payment flow and guest/login functional; SSI verification tested for anonymous metrics (e.g., gender %).
5	Mid-review: Test core flows (e.g., invest MUR 500, view dashboard); QA for mobile/accessibility.	Working prototype link shared; basic bugs fixed, Impact Dashboard with metrics (e.g., 70% progress bar).
6-7	Stakeholder testing: Simulate journeys (Priya's simple invest, Sophie's impact check); gather feedback from UNDP/CEB reps.	Feedback documented; adjustments to transparency links and token messages (manual distribution).
8-9	Iterate on feedback (e.g., polish tier cards, add notes for placeholders like 0 kWh); ensure off-chain simulations work seamlessly.	Refined prototype: Smooth flows, creative UI tweaks (e.g., animations inspired by lofty.ai).
10	Final polish, documentation (e.g., guide for future on-chain); prepare demo video and submission.	Demo-ready MVP: All features functional, SDG-aligned report, ready for accelerator submission.

Success Metrics & Milestones

Tracking progress throughout the accelerator is key to building momentum and measuring real impact.

Below is a set of baseline success metrics that all teams are expected to work toward during the sprint, MVP refinement, and pilot-readiness phases. These ensure a consistent level of development and stakeholder engagement across all projects.

Teams are also encouraged to define additional metrics that are specific to their solution, context, and strategic goals. These custom metrics can relate to: social or environmental impact, technical milestones, community adoption, strategic partnerships, innovation outcomes.

Sprint Phase

Focus: Rapid prototyping, initial user testing, and validation of core functionality.

Category	Baseline Metric
Blockchain Interaction	One meaningful blockchain function implemented (e.g., token minting, VC issuance, on-chain hash).
User Interface	At least one working UI screen or flow (e.g., form, dashboard, display screen).
Stakeholder Testing	Minimum 3 live or async testing/feedback sessions with relevant users or stakeholders.
SDG Integration	Incorporate SDG logic or tags into the metadata, user interface, or output, focusing on indicators your solution actively addresses.
Demo Readiness	Demo link or video walkthrough prepared and submitted by Day 10.

Post-Sprint Refinement

Focus: Iterating based on feedback, improving functionality, and aligning with pilot opportunities.

Focus Area	Baseline Metric

Feedback Integration	Minimum two user- or stakeholder-driven changes implemented in logic or UX.
MVP Stabilization	Functional testing completed with consistent results and no major blockers.
Stakeholder Alignment	At least one follow-up session with a CO or stakeholder to discuss next steps.

Pilot Readiness

Focus: Preparing the solution for deployment and scaling.

Goal Area	Suggested Metric
Institutional Buy-In	CO expresses interest in pilot exploration; early MoU or agreement in discussion.
Solution Readiness	MVP tested in an extended or external environment; improvements implemented.
Sustainability Path	Initial plan for post-program ownership or funding drafted.

Cumulative Tracking Suggestions

Consider using a simple dashboard or milestone tracker across the weeks to monitor:

- % completion of prototype milestones
- % of users tested
- % of stakeholder feedback items received & integrated
- % SDG contribution implemented in technical flow
- Progress toward pilot validation (e.g., 0–100 scale)

MVP Planning Table

After the prototype sprint, you'll begin shaping the full MVP. This table helps identify what's already been built, what needs improvement, and how each component will evolve into a pilot-ready version.

Component	Prototype Status	Improvement for MVP
UI/UX	[e.g., Form built]	[e.g., Add mobile layout]
Blockchain	[e.g., Hash created]	[e.g., Add QR or on-chain write]
SDG Tags	[e.g., Displayed]	[e.g., Make filterable]
Feedback	[e.g., 3 sessions]	[e.g., Expand to 5+ users]

Risk & Assumptions

Every project has uncertainties. Use this table to proactively identify key risks and assumptions and describe how your team plans to address them.

Risk/Assumption	**Description**	**Risk Level**	**Risk Mitigation Strategy**
Limited Cardano integration in MVP	The MVP relies on off-chain simulations for Cardano payments and lacks full smart contract functionality, as on-chain solutions (e.g., Plutus contracts) are planned for post-pilot.	Low	Use simulated Cardano wallet connections (e.g., mock ADA payments with metadata tagging) for testing; document roadmap for Plutus integration; pair team with Cardano mentors for future sprint planning.
Low user engagement	Users (e.g., Priya, Anil) may not participate in testing or provide meaningful feedback due to low tech literacy or awareness, impacting validation of flows and SDG metrics.	Medium	Pre-schedule 3 testing sessions (async with local parents, live with CEB reps, diaspora via LinkedIn); leverage UNDP's school outreach and social media campaigns, to boost awareness and incentivize feedback with small

			rewards (e.g., recognition).
Data privacy concerns	Tracking SDG 5 metrics (e.g., % women investors) via Hyperledger Identus SSI may raise concerns under Mauritius Data Protection Act if users don't understand consent or VCs.	Medium	Implement clear, user-friendly consent forms at login/ investment; use SSI's zero-knowledge proofs for anonymized data (e.g., gender without PII); conduct DPA compliance audit and provide user-friendly guides on data privacy.
Inaccurate impact metrics	CO_2 offsets and MWh generated rely on placeholder estimates (e.g., 0 kWh pre-installation), risking misalignment with SDG 7/13 goals if CEB audits delay.	Medium	Use CEB-verified carbon calculators and quarterly audits; include clear notes in UI (e.g., "Updates post-installation") for transparency; cross-check with independent solar monitoring tools during pilot.
Sufficient user onboarding	Assumes 500 active users (e.g., locals, diaspora) will onboard within the first year via login modes, critical for funds and SDG metrics.	Medium	Offer guest mode to reduce barriers (like lofty.ai); run UNDP-led campaigns targeting schools and diaspora groups; simplify SSI login with Hyperledger Identus via tutorials for low-tech users.

Team Profile

This section provides a comprehensive overview of the individuals and organizations behind the development and implementation of the proposed solution. It highlights the complementary expertise of both the Solution Makers and the Challenge Owners, underscoring the collaborative foundation of the accelerator.

Solution Makers

Introduce the team behind the solution, highlighting relevant skills and backgrounds that contribute to your ability to execute this project successfully.

Team Name

Socious Inc

Team Members & Roles

(Briefly list team members and their core roles or responsibilities)

- *Seira Yun - CEO*
- *Tarh Joshua – Product Manager*
- *Manah Linda – Project Lead and BizDev*
- *Iman - Frontend Developer*
- *Mohammad - Backend Developer*

Challenge Owners

The Country Office or institutional partners who defined the development challenge and provided critical context, feedback and collaboration throughout the accelerator.

Challenge Owner Organization Name:
(UNDP Country Office or other organization)

UNDP Mauritius & Seychelles Country Office

Team Members & Roles:
(List key representatives and their roles

- *Vichittra Purdassee - Project Manager*
- *Alexandre Mboule - eHealth IT Implementation Specialist*
- *Vathlu Nazombe - eHealth IT Implementation Specialist*
- *Lyse Aneze - eHealth IT System Assistant*

Area of Focus:
(Brief statement summarizing the thematic area, e.g., financial inclusion, public service transparency)

Innovative Climate Finance & Digital Inclusion for Renewable Energy in Education – leveraging blockchain-based crowdfunding to promote financial inclusion, public service transparency, and community empowerment while accelerating the renewable energy transition in Mauritian schools.

Notes & Insights

Use this section to capture key learnings, challenges, or insights discovered during prototyping. This could include quotes from stakeholders, reflections on usability, or ideas for future iterations.

(Examples:

- *"Users found the onboarding form too long."*
- *"Stakeholders appreciated transparent SDG contribution."*
- *"Potential opportunity to integrate with local registry in next phase.")*

***Stakeholder feedback** highlighted strong enthusiasm for reducing school electricity costs, but also concerns about **regulatory complexity** (FSC Crowdfunding Rules, VAITOS Act) and governance of funds*

***Prototyping can demonstrate** how blockchain-enabled crowdfunding can **increase trust through transparency**, though usability testing revealed the need for **simple, mobile-friendly interfaces** for micro-investors (including diaspora).*

*CEB appreciated the **integration of SDG contributions (4, 7, 13)** into the platform, which can be tracked and reported in real time.*

*Early financial modelling suggests that a **50kWp system** generates a **198% ROI over 20 years**, with a **payback of ~7.9 years** showing evidence of long-term viability.*

***Challenges identified**:*

- *Ensuring sufficient fundraising volumes per project.*
- *Balancing tokenization features with regulatory compliance.*
- *Maintenance capacity across multiple school sites.*

***Ideas for future iterations**: integrate **carbon credit tracking**, introduce **student-led "solar clubs"** to monitor performance, and gamify diaspora contributions with **impact badges**.*

Pilot Vision & Scalability Plan

This section looks beyond the prototype to outline the long-term vision for piloting and scaling your solution.

Pilot Vision (6–12 months)

(Describe what success would look like in a real-world pilot. What key outcomes would you aim to demonstrate?)

- *Demonstrate successful installation of **solar PV systems in 3–5 pilot schools** (mix of rural, urban, and different sizes).*
- *Show **cost savings on electricity bills**, reinvestment into educational programs, and proof of **transparent fund flows via blockchain**.*
- *Engage school communities towards sustainable investment, **sustainability education**, with students using live dashboards to track energy generation and CO_2 savings.*

Target Users or Communities for Pilot

(Indicate who will benefit from the pilot deployment, specific regions, stakeholder groups, or institutions.)

- ***Direct beneficiaries**: Government secondary schools, particularly those with high energy bills.*
- ***Indirect beneficiaries**: Students, teachers, parents, and local communities.*
- ***Investors**: Local citizens, Mauritian diaspora, and impact investors interested in green energy.*
- ***Institutions**: Ministry of Education, CEB, UNDP, and regulatory partners.*

Scalability Plan

(Explain how you envision scaling the solution after the pilot. What elements are reusable or adaptable across contexts?)

- *Expand platform to **all government schools** in Mauritius, with the potential to include primary schools and tertiary institutions.*
- *Modular design of crowdfunding platform allows replication in **health facilities, community centers, or local SMEs**.*
- *Long-term potential to integrate with **regional green investment markets** and issue **tradable carbon credits**.*

Support Needed

(Briefly outline any technical, policy, or funding support required to move forward with a pilot or scale-up.)

- ***Technical**: Platform development and integration with CEB smart metering data.*
- ***Policy & Regulatory**: Fast-track approvals for sandbox testing and crowdfunding licenses.*
- ***Funding**: Seed capital to cover initial installation costs before crowdfunding cycles stabilize.*
- ***Capacity**: Training school administrators on fund and system management.*

Sustainability & Business Model (optional)

If relevant, describe how the solution can be sustained over time (financially, operationally, or institutionally).

Business or Funding Model

(Will your solution generate revenue, rely on grants, or operate through public partnerships?)

- *Revenue from **CEB feed-in tariffs (MUR 4.20/kWh)** would ensure predictable income.*
- *Crowdfunding platform sustainability through **small transaction fees** and potential **corporate sponsorships**.*
- *Schools save significantly on electricity bills, reinvesting in education.*

Key Resources & Partnerships

(What ongoing resources (e.g., cloud services, development talent, regulatory access) are needed to maintain and grow the solution?)

***Partnerships**: UNDP (strategic), Socious Fund (platform development), CEB (grid integration), Ministry of Education (school selection), Ministry of ICT (technical support).*

***Other resources**: legal expertise in crowdfunding & tokenization compliance.*

Long-Term Ownership / Maintenance

(Who will manage and maintain the solution after the pilot, your team, a partner, or a public agency?)

- ***Educational institutions*** *own and operate the PV systems.*
- *Platform maintained by a* ***public-private foundation*** *with oversight from UNDP, CEB, Ministry of ICT and independent trustees.*
- *Approved solar installers responsible for long-term maintenance contracts.*

Deliverables Checklist

Use the checklist below to ensure all relevant final materials are prepared and submitted for review.

These are the suggested key outputs from the prototype sprint, not all items may apply to every team or solution, so please adapt as needed based on your project's scope and stage.

Please link all deliverables in a dedicated shared folder for your team for easy access by the program team and stakeholders.

- Prototype demo link
- Source code / GitHub repo
- Documentation / ReadMe
- SDG metadata logic
- Feedback summary
- Video walkthrough
- Feedback from Country Office
- Next steps agreed (pilot planning in 3–5 schools)

Team Reflection

Use this space to share key takeaways and reflections from both the Challenge Owner and Solution Maker teams. This dual perspective helps document alignment, evolution of understanding, and mutual growth during the accelerator journey.

Challenge Owner's Perspective

(Examples from the Challenge Owner's Perspective:

- *"We gained a deeper understanding of how blockchain can be applied to solve complex development issues within our country context."*
- *"Collaborating closely with technical teams helped us refine our challenge statement and prioritize features for maximum community impact."*
- *"This experience helped us develop internal capacity for innovation-focused partnerships, which we intend to scale.")*

- *"We gained clarity on how* ***blockchain financing can complement government schemes*** *like CEB's educational tariff programs."*

- *"The sprint deepened our capacity to partner with* ***non-traditional partners*** *while staying aligned with climate and education goals."*

- *"We see this as a model for* ***community-driven financing*** *that strengthens both the green economy and educational equity."*

Solution Maker's Perspective

(Examples from the Solution Maker's Perspective:

- *During our engagement with stakeholders, we discovered that clarity on fund usage, especially what happens if fundraising goals aren't met, was a critical trust factor we hadn't fully addressed initially, prompting us to plan a goal policy and then refund policy in the UI if all goals are not met.*
- *After feedback from the UNDP Mauritius team, we shifted focus from immediate token minting to leveraging Hyperledger Identus SSI for verifiable credentials, simplifying user onboarding while navigating privacy regulations effectively.*