Insights from Impact Frameworks

PART I: UN-aligned evaluation approaches

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UN-ALIGNED COMMON EVALUATION APPROACHES

This section provides a brief overview of common evaluation approaches frequently incorporated into UN impact frameworks and guidelines. Chosen based on adaptability, methodological clarity, and suitability for the emerging technologies, they provide practical, implementation-level methods for defining indicators, gathering evidence, assessing change pathways, and validating impact in complex systems.

1. Theory of Change (ToC)

The ToC model is required by RBM and widely used across UN agencies. Blockchain systems introduce multi-layer causal chains (protocol → service layer → institutions → end-users). ToC helps articulate how technical activities translate into social or institutional outcomes.

- Focus: Causal logic, assumptions, change pathways.
- Method: Problem analysis → outcome map → assumptions → indicators.

When applying ToC to blockchain projects, project developers should:

1. Map how transparency, integrity, or decentralization translate into SDG outcomes.
2. Clarify what must happen off-chain (institutional adoption, user behavior).
3. Ensure token incentives are aligned with intended outcomes.

2. Logical Framework (Logframe)

The Logframe's matrix structure provides clarity and measurability, aligning with the SDG indicator hierarchy. It supports rigorous indicator design in blockchain projects that risk overemphasizing technical metrics (TPS, gas fees) instead of development outcomes.

- Focus: Inputs → Outputs → Outcomes → Impact.
- Method: Standard 4-column matrix (Indicators, Baselines, Verification, Assumptions).

When applying Logframe to blockchain-enabled impact projects, project developers should:

1. Match on-chain data (e.g., transactions, attestations) with off-chain verification.
2. Define minimum viable indicators for pilots.
3. Identify assumptions and risks in decentralized mechanisms.

3. Outcome Harvesting

Blockchain projects—especially open-source, ecosystem-based, or permissionless systems—often generate emergent, unexpected outcomes. Outcome Harvesting is suitable when outcomes are not predefined or linear in nature.

- Focus: Emergent outcomes/ contributions
- Method: Identify outcomes → verify relationships → explain contributions (if there are)

When applying Outcome Harvesting to blockchain-enabled impact projects, project developers should:

1. Capture emergent ecosystem effects (e.g., community-driven improvements) by asking:
   a. Who/ what changed?
   b. In what way (observable changes)?
   c. When and where did the change begin and occur?
2. Have the project or project stakeholders contribute to the change? If yes, in which ways?
3. Document indirect or tertiary impacts by (e.g., transparency influencing procurement).
4. Validate claims without requiring strict counterfactuals.

4. Contribution Analysis

Tokenized ecosystems involve multiple actors (developers, validators, institutions). Contribution Analysis helps assess blockchain's plausible contribution to complex outcomes when attribution is impossible.

- Focus: Plausibility of contribution, not attribution.
- Method: ToC validation → evidence gathering → ruling out alternatives

(confounding factors).

When conducting contribution analysis to blockchain-enabled impact projects, project developers should:

1. Evaluate the projects (infrastructure, setup, operational processes) in terms of transparency gains within multi-stakeholder systems.
2. Identify parallel changes in the ecosystem, such as parallel reforms (digitization, capacity-building, Healthcare reform, etc.).
3. Distinguish between blockchain effects and project effects, and those of parallel changes.
4. Strengthen credibility of impact stories and case studies by conducting qualitative interviews, seeking expert validation, and similar methodologies.

5. Human-centered & Participatory Methods

Human-centered methods ensure evaluations incorporate the perspectives of the most affected.

- Focus: Inclusion, Accessibility, Meaningful Participation.
- Method: Co-design workshops, participatory M&E, gender, and vulnerability analysis.

Blockchain projects—especially those focused on identity, registry, or transparency systems—carry risks related to exclusion and power. The project developers should:

1. Include affected communities in design and planning processes (e.g. co-design with the affected communities)
2. Evaluate the accessibility of blockchain interfaces.
3. Assess whether decentralization actually increases participation.
4. Identify unintended exclusion (digital divide, literacy, connectivity).

6. Developmental Evaluation

Developmental evaluation supports real-time learning and adaptation, which is relevant for blockchain pilots, sandboxes, digital registries, and systems transitioning from prototype to scaled deployment. Its focus is continuous learning through iterative data

collection and analysis cycles, sensemaking, and adjustment.

In developing and scaling blockchain projects, developers should:

1. Support ecosystem building pathways to continually integrate feedback and insights.
2. Monitor risks dynamically, comprehensively (governance, privacy, data quality, etc.), and proactively.
3. Adapt token designs or governance rules as unintended effects emerge.

7. Impact Management Project (IMP) and IRIS+ Dimensions of Impact

The IMP[1] and IRIS[2] developed a shared logic for understanding, measuring, and comparing impact. The questions on five dimensions reveal the nature of an impact:

1. What outcomes the activity is contributing to, and whether these are positive or negative.
    a. Outcome category
    b. Importance of the outcome to stakeholders\
    c. SDG target alignment
2. Who experiences the outcome, and how underserved or at-risk they are.
    a. Target population
    b. Socioeconomic characteristics
    c. Degree of vulnerability or marginalization
3. How much change is occurring and over what duration?
    a. Scale (how many people are affected)
    b. Depth (degree of change)
    c. Duration (how long the change lasts)
4. Whether the change would likely have happened anyway without the project (contribution)
    a. Additionality
    b. Counterfactual reasoning
    c. Contribution relative to alternatives

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[1] https://impactfrontiers.org/norms/
[2] https://iris.thegiin.org/document/iris-and-impact-management-project/

5. The likelihood that the impact is different from expected, including potential harms (risk).

   a. Evidence risk
   b. External risk
   c. Execution risk
   d. Stakeholder risk
   e. Environmental and social risks

INSIGHTS FROM SELECTED UN & UN ADJACENT APPROACHES

We identify a focused subset of UN and UN-adjacent frameworks as the most relevant for informing blockchain-enabled impact assessment. These frameworks were selected because they:

- explicitly align with SDGs or UN priorities,
- offer clear methodologies and replicable indicator structures,
- have been validated across UN institutional contexts, and
- offer practical adaptability for decentralized, data-driven, or token-based systems, where blockchain is an enabling layer of transparency and coordination.

Taken together, these frameworks enable the development and evaluation of blockchain-enabled interventions to be conducted credibly, ethically, and in alignment with global development priorities, while leveraging the unique transparency, traceability, and coordination capabilities of decentralized technologies.

- A global measurement anchor: Sustainable Development Goals (Global SDG[3, 4], SVI[5]) provide the what and for whom of impact.
- A causal structure: Result-Based Management[6, 7] (RBM), Impact Measurement & Management Framework[8] (IMM), provides insight into how change is expected to

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[3] https://unstats.un.org/sdgs/indicators/Global-Indicator-Framework-after-2025-review-English.pdf
[4] https://unstats.un.org/wiki/spaces/SDGeHandbook/pages/34505092/Home
[5] https://www.socialvalueint.org/principles
[6] https://www.undp.org/turkiye/publications/undp-handbook-planning-monitoring-and-evaluating-development-results
[7] https://unsdg.un.org/resources/unsdg-results-based-manand theagement-handbook
[8] https://sdgprivatefinance.undp.org/aligning-capital/impact-management-and-measurement-trainings

occur.

- Evaluation quality foundations: UNEG Norms & Standards[9], UNDP Evaluation Guidelines[10] define how we determine credibility.
- Decision and governance rigor: SDG Impact Standards[11], UNDP Social & Environmental Standards[12] ensure we decide and govern responsibly
- Digital Design Principles & Safeguards:
  - UNDP Digital Development Compass[13] ensures that projects are feasible.
  - UNDP Digital Standards & Inclusive Value Chains[14] ensure design quality, inclusivity, usability, equity, and human-centered safeguards.
  - DPG Standards[15] ensure openness through open-source and interoperability principles.

The selected frameworks collectively form a coherent foundation for developing an ETH × UN-aligned impact logic, ensuring that blockchain-enabled projects can be embedded into established development evaluation practices while leveraging the unique affordances of blockchain infrastructure.

1. Impact must be material, stakeholder-centered, and evidence-based (SVI + Web3 Signals)

Blockchain generates substantial technical data (transaction counts, staking, attestations), but its impact cannot be inferred from activity alone. Metrics must reflect stakeholder value, not protocol usage.

- Prioritize stakeholder-co-defined outcomes when selecting on-chain metrics.
- Treat transaction counts, token stakes, or wallet interactions as signals, not as outcomes.
- Avoid overclaiming: require supporting evidence before translating technical signals into claims about well-being, access, inclusion, or empowerment.
- Document all assumptions used to value or interpret on-chain signals, especially in retroactive funding, hypercerts, or impact token designs.

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[9] https://www.unevaluation.org/uneg_publications/uneg-norms-and-standards-evaluation-un-system
[10] https://erc.undp.org/methods-center/guidelines
[11] https://sdgprivatefinance.undp.org/
[12] https://www.undp.org/publications/undp-social-and-environmental-standards
[13] https://www.undp.org/digital/standards
[14] https://www.undp.org/sdgvaluechains/digital-in-motion
[15] https://github.com/DPGAlliance/dpg-standard/blob/main/standard.md

- Enable stakeholder attestations (verifiable credentials, DID-backed surveys) to serve as qualitative evidence alongside blockchain-native metrics.
- Community-owned protocols can incorporate continuous outcome reporting and utilize SVI materiality tests within QF or RPGF scoring models.

Impact comes from perceived and actual change for people, not from cryptographic activity. These approaches align with impact-oriented strategies.

2. Impact requires a dual-layer causal pathway (RBM + IMM + Web3)

Blockchain systems produce technical outputs (transactions, proofs, attestations), but impact emerges from behavioural, institutional, and social changes off-chain.

- Use RBM to build a dual-layer Theory of Change:
  - On-chain: verifiable actions, transactions, contracts, attestations
  - Off-chain: inclusion, trust, access, governance quality, service delivery
- Make assumptions explicit ("users can access wallets", "officials will check records"). Treat them as hypotheses to test—not guarantees.
- Apply IMM's five dimensions (What, Who, How Much, Contribution, Risk) to clarify:
  - What impact does the mechanism rewards
  - Who benefits (or is excluded)
  - Over what timeline
  - Whether blockchain adds value over alternative digital systems
  - Which risks (governance, volatility, environmental, exclusion) are introduced
- In impact-linked token models (RPGF, hypercerts), report IMM dimensions, not usage stats.

UN systems require causal, testable, contextual impact logic; thus, Web3 solutions should communicate verifiable pathways.

3. Impact evaluation must be ethical, independent, contextual, and mixed methods (UNEG)

Evaluations need transparency, independence, and triangulation.

- Design evaluations consistent with UNEG:
    - Independent evaluation teams, or at least separation of roles
    - Clear documentation of methods and limitations
    - Inclusion of affected communities, not only developers or token holders
- Use mixed methods:
    - Quantitative on-chain data
    - Qualitative interviews, human feedback, contextual narratives
    - Participatory workshops, user research
    - Administrative data and system logs
- Contextualize cryptographic proofs with human experience ("What does being verified mean for someone?").
- Validate algorithmic outputs (e.g., scoring mechanisms, evaluators, sybil filters) through human-centered checks.
- Triangulate evidence across at least three sources before making impact claims.

4. Decisions, incentives, and governance must be impact-aligned (SDG Impact Standards + SES)

Blockchain infrastructure introduces new actors, incentives, and governance structures. Impact depends on how decisions are made, not just what the technology does.

- Every funding or governance decision (grant, token mint, QF match, RPGF award) should be reviewed for:
    - Relevance to SDG outcomes
    - Expected outcome contribution (IMP)
    - Risk profile (inclusion, governance, environmental, financial)
- Integrate SES into protocol and token design reviews ("What harms could emerge from this ledger being permanent?").
- Embed impact into protocol governance:
- Assign accountable decision roles
    - Document decision rationales
    - Publish evidence and uncertainties
    - Separate outputs (usage) from outcomes (change that matters)
    - Include affected communities in governance—not only token holders or crypto-native participants.

- Ensure transparency beyond "open code"; governance must be legible to non-technical stakeholders.

5. Safety, equity, harm prevention must be integrated (SES + Digital Safeguards + DPG Standards)

Blockchain systems can unintentionally amplify risks—such as immutability, public visibility, token incentives, and traceability—especially for vulnerable populations.

- Ensure dApps and infrastructure comply with DPG standards:
    - Open license
    - Full documentation
    - Privacy-preserving
    - Reusable modules
- Make interoperable systems by default: open APIs, standard schemas, compatible contracts.
- Combine blockchain traceability with equity indicators (e.g., price share for small producers) to avoid purely technical optimization.
- Treat Social & Environmental Standards (SES) and digital standards as mandatory:
    - Consent, privacy, and data minimization for identity systems
    - Do not expose traceability data that could harm individuals
    - Avoid token models that reinforce inequality or exploitation
- Design impact registries, funding protocols, and identity layers to be:
    - Open-source
    - Reusable across geographies
    - Modular and composable
    - Governed transparently

CONCLUSION

Across UN used impact evaluation and management frameworks (SVI, RBM, IMM, UNEG, SES, SDG Impact Standards, Digital Standards, DPGs) and Web3-native practices (QF, RPGF, attestations, impact tokens, Hypercerts), a unified set of insights emerges:

Blockchain-enabled impact requires a hybrid logic (on-chain ↔ off-chain): technical verifiability, human-centered, ethical, and contextual evaluation, along with governance and incentives aligned with the SDGs.

However, there remain conceptual gaps:

- None of the frameworks fully theorize decentralized governance, token incentives, or on-chain funding as first-class subjects.
- Real-time, high-frequency data is not fully integrated: frameworks assume periodic reporting cycles, whereas blockchain data can offer continuous insights.

The key dimensions can be explicitly carried into blockchain impact delivery, assessment, and reporting:

- Alignment: SDG and stakeholder relevance.
- Causality: How activities and technical features lead to outcomes.
- Evidence quality: Rigor, triangulation, independent evaluation, ethics, mixed methods use.
- Governance: Decision rights, accountability, risk management.
- Readiness: Institutional and infrastructural preconditions.
- Design & inclusion: Accessibility, equity, openness, interoperability, harm-prevention.
- Public infrastructure: Open, interoperable, reusable digital public infrastructure