Whitepaper: The Impact Network – Empowering Philanthropy Through iNFT-Owned AI Agents and Cross-Chain Real-World Impact

Abstract

The global philanthropy market, valued at roughly $770B in annual monetary donations (>$1.3T including the value of volunteer time), is hindered by high fundraising costs, fragmentation, and opaque impact verification. The 0Impact is a decentralized platform that connects Impact Providers (charities, social enterprises, carbon/eco-credit issuers) with swarms of AI Agents owned as intelligent NFTs (iNFTs). Agents autonomously match donors with tokenized Real-World Impact (RWI) assets and handle outreach, education, and checkout.

Revenue is performance-based: acquisition cost is set by each Impact Provider (default 10% at launch, adjustable) and allocated among agent owners, the protocol, and the RWI Treasury (per listing and governance). Providers receive funds net of their chosen acquisition cost, creating a free-market dynamic where higher incentives tend to attract more agent attention.

Using the Cross-Chain Ecological Protocol (CCEP) ecoBridge, each verified impact event (e.g., a tree planted, a meal provided, one tonne of CO_2 reduced) mints or updates an RWI token on-chain, creating a composable, auditable ledger of impact. RWI is minted only by funding real-world outcomes (no premine, no team allocation, no airdrop). Utility includes Treasury governance, agent-only upgrades, staking for routing priority, and optional buy-and-burns. An issuance curve favors early bootstrapping (e.g., 100 RWI per $ at genesis tapering toward ~1 RWI per $ by $100M cumulative impact), justified by network-effects principles.

From Day 1, 0Impact also operates a 0G validator that enables 'Impact Staking': anyone can stake 0G to earn competitive yield (standard 10% validator commission), while all validator revenue funds verifiable impact and distributes RWI—creating a win-win-win for stakers, causes, and the network.

1) Introduction & Vision

Despite massive generosity, traditional fundraising wastes resources: ~15–35¢ per $1 raised is consumed by acquisition/overhead, discovery is fragmented, and proof of impact is delayed or unverifiable. We envision a regenerative market for impact: supply (verifiable outcomes) meets demand (donors, companies) through autonomous agents, with every dollar tracked to an on-chain RWI token that can interoperate with Web3.

Core idea: make doing good as efficient and composable as e-commerce—transparent, performance-based, and scalable. As impact grows, agents earn, the protocol sustains, and RWI accrues utility. The result is a positive feedback loop where impact begets more impact.

Figure 1. Positive feedback loop.

2) Problem

- **High acquisition costs:** Traditional methods (direct mail, events, paid media) often exceed 20% cost to raise a dollar; small providers are hit hardest.
- **Fragmentation & trust gaps:** Cross-border giving and eco-credits suffer from siloed registries and inconsistent verification.
- **Poor interoperability:** Real-world outcomes rarely surface as programmable, composable assets; they cannot plug into DeFi/ReFi rails.
- **Volatile donor retention:** One-off giving cycles starve programs of stable runway; recurring value and engagement are limited.

3) Platform Overview

The Impact Network is a two-sided protocol:

- **Impact Providers (Supply):** list impact assets (e.g., 1 tonne CO_2, 100-meal bundle, clean-water day) with verification methods. Providers receive funds net of their chosen acquisition cost; sales auto-trigger RWI issuance/updates.
- **AI Agents (Demand):** autonomous iNFT-owned agents that prospect, educate, and convert donors across channels (email, socials, messaging, partner apps).
- **Settlement:** smart contracts split funds according to the listing's acquisition-cost setting (as determined by the Impact Provider), with allocations to agent owners, the protocol, and the RWI Treasury. RWI records the impact event on-chain.
- **Impact Staking:** 0Impact runs a 0G validator that lets any holder stake 0G and earn competitive on-chain yield. The validator's standard 10% commission is directed to fund verifiable impact and to distribute RWI to participants, turning baseline network security into continuous real-world outcomes.

Network effects: More providers → more attractive catalog → higher agent ROI → more agents → more donors → more RWI proofs → more trust → more providers.

4) AI Agents as iNFTs

iNFTs encapsulate an agent's persona, prompt stack, skills, and reputation. Owners deploy agents, fund compute, and earn commissions.

- **Ownership:** ERC-7857 iNFT with transferable ownership; secondary markets can value agents by historical ROI.
- **Customization:** no-code parameters (cause focus, tone, languages), brand libraries, pre-trained playbooks.
- **Integrations:** email, social APIs, chat widgets, partner marketplaces; optional voice front-ends.
- **Routing & ranking:** marketplace scheduler allocates campaigns by cause fit, performance, and any RWI-based staking.
- **Staking (Impact Engine validator):** A portion of each newly-minted RWI is automatically staked to the protocol's Impact Engine validator to earn RWI distributions for the agent.

5) RWI Tokens: Principles & Design

Definition. RWI (Real-World Impact) is an ERC-20 token on the 0G blockchain representing verified impact. Each mint/update references evidence (attestations, oracle data, registry IDs) and links to a public explorer entry.

Foundational principles:

- **Impact-only minting:** RWI is minted exclusively upon funding or verification of real-world outcomes. No premine, no team allocation, no airdrop. This is "RWI mining."
- **Non-cap supply:** issuance scales with impact; supply is unbounded but strictly tied to outcomes.
- **Neutral baseline unit:** 1 RWI is a unit of protocol utility/governance, not an emissions offset by itself; specific verticals (e.g., carbon) carry their own metadata and rules.
- **Bonding curve & network-based issuance:** RWI per dollar is determined by a published bonding curve keyed to network adoption, granting higher issuance at launch and tapering toward a steady-state floor as adoption scales.

6) Impact Validator & Impact Staking

0Impact operates a 0G validator that converts network security into real-world outcomes. Stakers delegate 0G and earn competitive staking rewards; the validator applies a standard 10% commission. That commission is programmatically allocated to (i) fund verified impact and (ii) distribute RWI to stakers aligned with their pro-rata contribution. This creates a win-win-win loop: stakers earn yield, causes receive continuous funding, and the protocol mints RWI tied to verifiable outcomes. Impact Staking complements agent-driven fundraising by providing a baseline, always-on impact stream anchored to 0G network activity.

7) Economics & Fees

- **Acquisition cost (commission):** set by each Impact Provider per listing (free-market), with an initial default of 10% at launch. Proceeds from this acquisition cost are split among agent owners, protocol operations, and the RWI Treasury (governed by RWI holders).
- **Validator commission (Impact Staking):** 10% (industry standard) on validator rewards, programmatically split to fund verifiable impact and distribute RWI to stakers.
- **Treasury:** automatic **%** of gross accrues to the RWI Treasury for governance-directed uses (buy-and-burns, liquidity, grants, verification subsidies). Governance may revise allocations by vote.
- **Provider bonuses (optional):** providers may offer temporary agent bonuses (+1–5% of gross) from their proceeds to accelerate funding; bonuses are time-boxed per listing.

- **Compute economics:** agent owners fund their own compute; fee share is designed to exceed expected CAC under typical conversion assumptions (see §11).

Use of Treasury: RWI governance can (i) buy & burn RWI, (ii) fund grants/bounties, (iii) seed liquidity, or (iv) sponsor verification ops—all by governance vote.

8) RWI Issuance Policy & Network-Effects Curve

Goal. Reward early impact funding more richly because it bootstraps network value (supply, trust, distribution). Over time, taper issuance toward a steady-state that reflects mature network effects.

Policy (illustrative baseline):

- **Genesis rate: 100 RWI per $** of verified impact at $0 cumulative funded.
- **Quadratic taper to maturity:** decrease according to a Metcalfe-aligned square law to a 1 RWI per $ floor by $100M cumulative impact funded across the protocol.
- **After maturity:** maintain the 1 RWI per $ floor (subject to future governance if network conditions change).

Justification (network effects): Approximate network utility as proportional to n^2 (Metcalfe). Each early dollar expands *n* more than a late dollar; the quadratic taper mirrors diminishing marginal network utility, aligning issuance with social benefit while preventing runaway issuance late in the curve.

Formula. Let **C** = cumulative funded impact (USD) and C* = $100,000,000. Issuance per dollar I(C):

$$I(C) = \max\{\, \mathbf{1},\ \mathbf{100 \cdot (1 - C/C^*)^2} \,\}$$

Supply implication (to $100M): Integrating this policy yields ~3.34B RWI minted by the time the protocol reaches $100M cumulative funded, after which issuance continues at 1 RWI per $.

Governance after maturity: Upon reaching the maturity threshold, RWI holders may vote to keep the floor, introduce adaptive epochs, or implement buy-and-burn policies to balance issuance with demand.

9) RWI Utility & Holder Rights

- **Treasury Governance:** propose/vote on use of the RWI Treasury (buy-burns, grants, liquidity, audits, explorer features).
- **Agent-only upgrades:** certain agent capabilities (advanced playbooks, premium integrations, higher concurrency) are unlockable only with RWI stakes.
- **Routing priority:** stake RWI to boost an agent's routing score for relevant campaigns (balanced to avoid spam; slashing for abuse).

- **Fee rebates & tiers:** pay protocol fees in RWI for discounts or unlock wholesale rails for enterprise campaigns.
- **Access & reputation:** curated catalogs, partner APIs, and enterprise dashboards gated by RWI stake; leaderboards and badges recorded on-chain.
- **Liquidity programs:** governance can pair RWI with stable assets in AMMs or concentrate liquidity to stabilize price discovery.
- **Impact Staking rewards:** stake 0G to the 0Impact validator to earn on-chain yield while receiving RWI distributions funded by validator commission tied to verifiable impact.

10) Verification & Cross-Chain Architecture (CCEP ecoBridge)

- **Registries & standards:** The RWI ERC-20 token itself is non-referential (no embedded registry IDs). Verification artifacts (e.g., registry IDs, third-party attestations, oracle evidence) are recorded off-token and displayed on the public explorer alongside the impact event that triggered minting.
- **Oracles & cross-chain validation:** We use oracles to validate credit retirements, impact, and payments across chains.
- **Cross-chain:** CCEP relays state across major L1/L2s; scan.ecotoken.earth (illustrative) exposes a public ledger of issuance, transfers, and retirements.

11) Agent Profitability & Quality Controls

Profitability levers (for agent owners who pay compute):

- **High-fit routing:** campaign–agent matching by historical conversion and topic affinity.
- **Learning loops:** shared best-practice libraries; on-policy RL optimizing for *net funds to causes*.
- **RWI Staking:** Guaranteed RWI via mint fees being staked by 0Impact to the Impact Engine earning RWI on behalf of the iNFT holder.
- **Genesis holders – Impact Requests (pilot):** Early iNFT owners ("Genesis holders") can pitch the 0Impact agent on why network offsets should be routed through them, increasing agent revenue.

Appendix A – Issuance Curve

Quadratic taper from 100 → 1 RWI per $ as cumulative funded impact C goes from $0 → $100M, with a floor of 1 RWI per $ from $90M → $100M and beyond.

Cumulative Funded (USD)	RWI per $ Impact

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$0M	100.00
$5M	90.25
$10M	81.00
$15M	72.25
$20M	64.00
$25M	56.25
$30M	49.00
$35M	42.25
$40M	36.00
$45M	30.25
$50M	25.00
$55M	20.25
$60M	16.00
$65M	12.25
$70M	9.00
$75M	6.25
$80M	4.00
$85M	2.25
$90M	1.00
$95M	1.00
$100M	1.00

Exact per-$1M steps follow the formula in §7 and can be published as a CSV appendix.

Appendix B – Cash-Flow Examples

Example: $100 donation for a reforestation listing at C = $20M

- Issuance rate from Appendix A: 64.00 RWI/$ → 6,400 RWI minted/credited.
- Proceeds split: $90 to provider, $5 to agent, $4 to protocol, $1 to RWI Treasury.
- The RWI Treasury, governed by holders, may later buy & burn RWI or fund programs.

Example: $50,000 corporate CSR purchase at C = $60M

- Issuance: **16.00 RWI/$ → 800,000 RWI**.
- Fees: gross commission $5,000 → $2,500 agents / $2,000 protocol / $500 Treasury.

Impact Staking example (illustrative):

• A delegator stakes 10,000 0G to the 0Impact validator for year. The validator earns 15,000 0G in rewards; 10% (1,500 0G) is taken as commission to fund impact.

• Commission allocation: a portion funds verified impact (triggering RWI issuance) and is distributed as RWI to stakers pro-rata.

• Result: the delegator receives (i) their 0G staking rewards net of commission and (ii) an RWI distribution reflecting funded impact—turning passive staking into ongoing real-world outcomes.