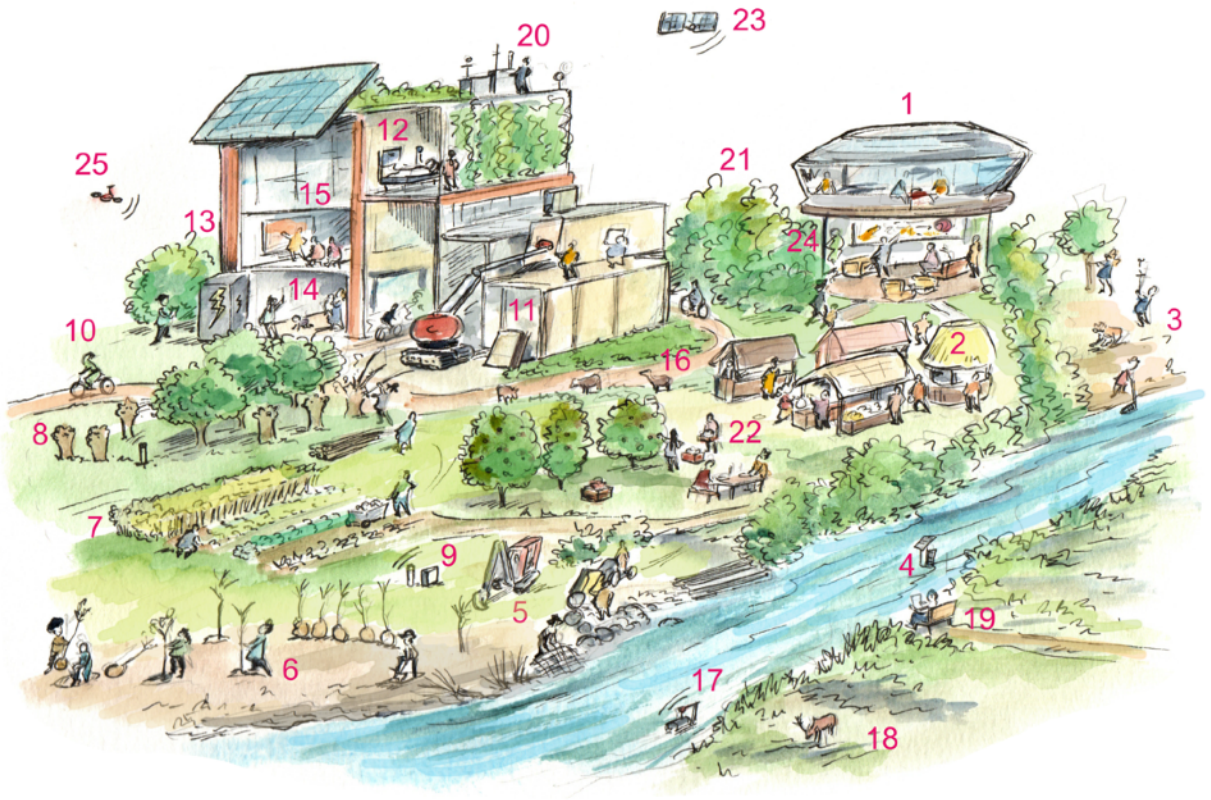
THE REGENERATIVE COMMONS: AN ALTERNATIVE METABOLISM

Paper and art By Dustin Jacobus

1. Introduction: The Hidden Financial Layer of the City

The sketch depicts a normal, vibrant city with its daily interactions: a market vendor selling fresh produce, a team of municipal gardeners planting trees, citizens doing technical repairs, and neighbors organizing childcare.

While these daily exchanges look simple, they are mediated by a hidden financial layer. In our current capitalist game, money is created as debt out of thin air by commercial banks, forcing a system of perpetual growth, speculation, and extraction. Value is systematically pulled away from communities, labor, and nature to accumulate at the top. This comic narrative introduces an alternative model rooted in **Mutual Credit, Modern Money Theory, Biophysical Economics, and Commons Governance,** all designed to align human activity with the living limits of our planet.



Map Legend

1	Commons house - Commons bank
2	Fresh Produce Market
3	Environmental Monitoring Specialists measure and monitor environmental indicators
4	River Monitoring System
5	River Restoration
6	Afforestation
7	Urban farming - permaculture practices
8	Pollard management - Biomass Pyrolysis
9	Groundwater Monitoring System
10	Sustainable Urban Mobility Infrastructure
11	Cooperative Housing Development
12	Health care system
13	Sustainable energy
14	Daycare - Childcare
15	Community Assemblies
16	Urban grazing
17	Streamflow Measurement System
18	Wildlife-Friendly Urban Planning
19	Wellbeing Measurement & Social Indicators: someone fills in a questionnaire, measuring how people perceive and evaluate their own lives and happiness
20	Urban Air Quality Monitoring
21	Urban Greening & Green Infrastructure Development
22	Community Orchards & Local Food Systems
23	Remote Sensing & Satellite-Based Monitoring
24	Open-Source AI and Biophysical Dashboard
25	UAV (Unmanned Aerial Vehicle) Monitoring: using drones to collect environmental and geographical information.

2. Micro Level: Mutual Credit & Reciprocity for Daily Exchanges

On the micro level, everyday exchanges do not require scarce, centralized currencies like Euros or Dollars. Instead, they run on **Mutual Credit and accounting**.

- **Fair Pricing via Labor & Impact:**

In today's market, the retail price of an apple is determined primarily by standard supply-and-demand mechanics, production costs (farm labor, storage, packaging), energy-dependent transport, and the profit margins demanded by commercial supermarket chains. However, the current model has a major design flaw: ***it externalizes ecological costs****.*



When a woman buys a sack of apples in a mutual credit system at the market, the price reflects real costs: labor time (in credits per hour), production input, and the ecological impact on land and water use, shielded from speculative market manipulation.



- **The Mechanics of Mutual Credit:** No physical or digital "money" changes hands initially. If the buyer has a balance of zero, her account drops to `-20`. This simply records a social promise: a liability to the mutual-credit network that she will clear by providing a good or service of equal value later. The vendor's positive balance is a claim on future goods and services within that network.

- **Closing the Loop:**

The same lady who bought the apples is skilled with children and offers her services at a local daycare practice. As she works her shifts, her credit account rises back into positive territory. This is one of many day-to-day practices handled smoothly on a local micro scale.

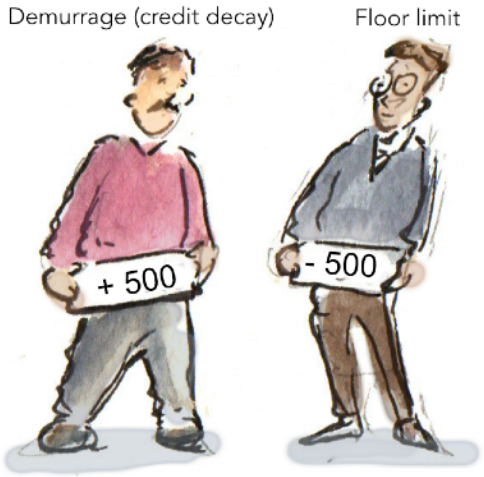


- **Dynamic Labor Valuation for Hard & Vital Tasks:**

In any economic system, certain jobs are less popular, physically demanding groundwork like digging pits, high-risk maintenance, or unpleasant sanitation tasks. While the system strives for equality, it attributes higher credit rewards to tasks that are desperately needed or physically onerous. For instance, an hour of labor-intensive groundwork might yield `+25 credits` compared to `+10 credits` for lighter tasks. This transparent incentive encourages people to take on vital community work voluntarily while ensuring tough labor is honored with real purchasing power.



- **System Safeguards:**
    - **Floor Limits (No Parasitism):** A lower limit (e.g., `-500`) prevents individuals from endlessly consuming without contributing. If reached, the person is prompted to give back through service.
    - **Demurrage (Credit Decay):** Accumulated credits lose value over time (like perishable food), preventing hoarding and forcing capital to circulate or be invested.
    - **Universal Welfare Base:** The Universal Welfare Base guarantees human dignity and survival, eliminating the fear of starvation, which is a major driver in a capitalist society. However, access to the broader wealth of community goods and services still requires reciprocity. Supported by dynamic labor credit rates and Ostrom's principles of peer stewardship, the system rewards active contribution while preventing both forced labor and social parasitism.



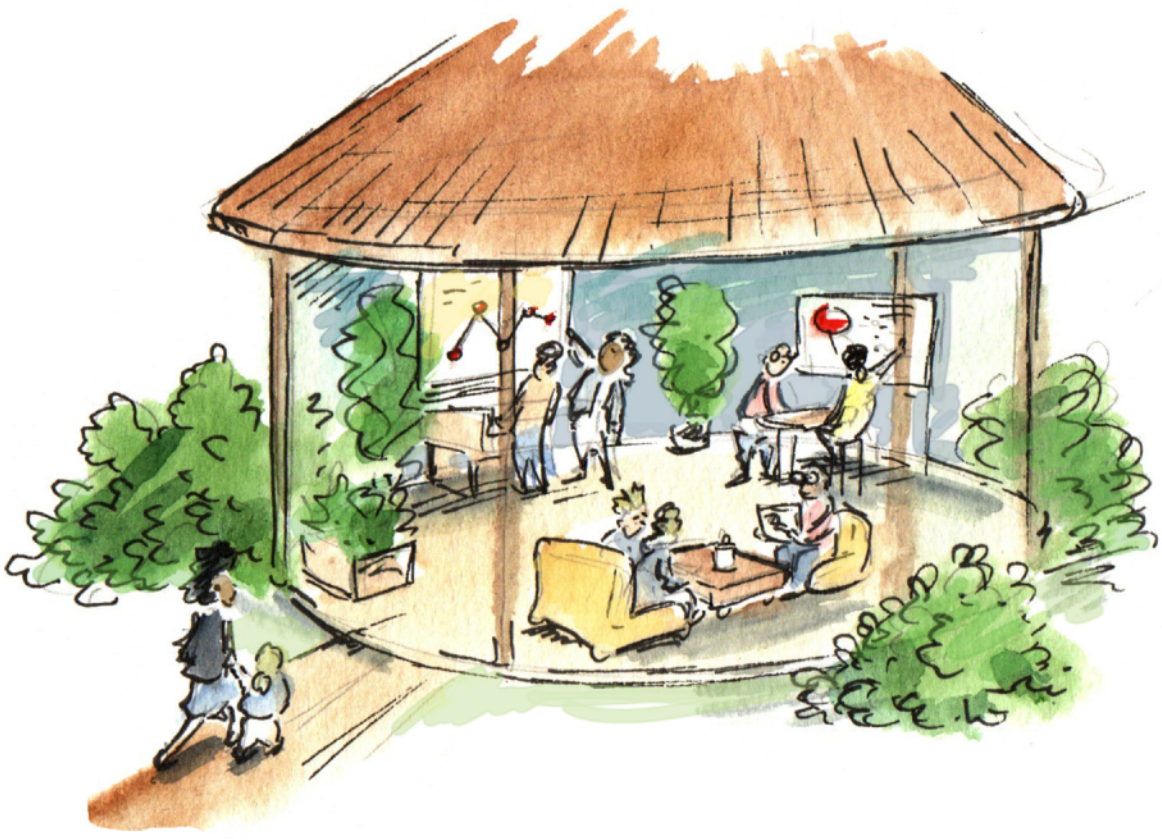
3. Meso Level: Cooperative Infrastructure & Usufruct

When moving from daily peer-to-peer exchanges to meso-level investments, such as constructing housing cooperatives, schools, or community hubs, money cannot be treated as a simple personal debt.

- **The Commons Bank:** Instead of a profit-driven commercial bank charging interest, a localized *Commons House* acts as an open hub. It issues credit based on *real physical capacity* (labor, materials, energy) rather than arbitrary financial speculation.

Example: Before issuing credit to build a new community school or grain mill, the Commons House checks its open-source dashboard to confirm the real-world availability of materials (e.g., local timber stocks), energy, and voluntary labor hours. Credit is issued only when the physical and ecological capacity to complete the project actually exists, preventing inflation and environmental over-exploitation.

- **Reimagining the "Bank": The Architecture of the Commons House:**Today, commercial banks are uninviting corporate towers, while their top layers function as exclusive, luxury spaces where lucrative private deals are struck behind closed doors. The Commons House flips this logic entirely. Architecture reflects attitude: it is designed as an open, warm, and inviting community gathering place. It is a space where citizens meet to discuss daily priorities, pitch ideas for local projects, and access open-source biophysical data to make informed decisions for their bioregion. Rather than extracting value behind glass facades, the Commons House functions as the civic living room of the neighborhood.



- **Usufruct over Private Property:** A school or a housing block is built using community credit. Once constructed, the physical asset is owned by the cooperative or the Commons, not by private speculators.

In Today's System: Real estate is treated as a financial asset to extract yield. Land and buildings are privately owned by individuals, developers, or corporate landlords who use commercial bank debt to bid up property values. Residents pay monthly rents or mortgages that extract wealth out of the community into private banks, while land speculation drives up housing costs regardless of real community needs.

In the Commons Model: A school, workshop, or housing block is built with community credit and permanently removed from the speculative market. The physical asset is legally owned by the cooperative or the Commons itself, not by private speculators.

- **The Social Contract:** Residents or users do not pay commercial rent or profit-driven mortgages. Instead, they hold a **usufruct (use-right)** coupled with active stewardship responsibilities (such as maintenance tasks and ecological upkeep). Social coordination and transparent protocols prevent local corruption or favoritism.

- **Lifecycle Clearing:** The initial construction credit is gradually cleared through contributions from its users, while ongoing maintenance is managed either through dedicated lifecycle funds or dynamic, low-volume maintenance credits released when sensors detect physical wear.

4. Macro Level: Non-Rivalrous Public Goods & Ecological Clearing

On a macro level, communities must build infrastructure that protects the entire bioregion, such as large-scale water buffers, wetlands, and climate adaptation networks, in response to long-term ecological shifts.

- **Non-Rivalrous vs. Rivalrous Goods:** Unlike a house (which is *rivalrous,* if one family lives there, another cannot), a regional water buffer is *non-rivalrous*. Protecting one household from a flood does not diminish the protection of another.

A typical practice driven by macro-level priorities is visible here: citizens organizing themselves after the Commons House raised a demand and issued credit for river restoration. The project deploys ecological restoration techniques, such as re-meandering bank structures, planting riparian buffers, and creating bio-swales. Local community members perform the restoration tasks, earning labor credits while directly reviving their local ecosystem. Hidden behind this local river project lies a wider international directive: calculating and managing global hydrological data to heal planetary water cycles, planned at an international scale and executed through self-governing local action.



- **Clearing Without Individual Debt:** Because public ecological infrastructure benefits everyone collectively, citizens do not pay an individual "debt" for a water buffer. Instead, the `-8 million` credit used to pay workers, engineers, and sensor-makers is **amortized through the physical and ecological value preservation of the bioregion**. The "debt" is cleared not in cash, but in systemic resilience and survival.

Collective Amortization (Community Clearing Fee): Instead of charging an *individual debt* to specific households, the Commons House clears the `-8 million` balance gradually across the whole bioregion through a small, non-interest collective clearing margin attached to general trade (or a micro-percentage fee on all mutual credit transactions). It functions like a public utility fee, steadily bringing the Commons account back toward zero as the infrastructure delivers its multi-year benefits.

Bioregional Bilateral Clearing (Common Clearing Unions):

- **Reciprocal Trade:** Bioregion A clears its trade debt with Bioregion B by exporting surplus goods that Bioregion B needs (e.g., solar energy, timber, or specialized food crops).

- **Bioregional Demurrage & Credit Limits:** Just like individuals have credit floors (`-500`), entire bioregional cells have **macro-credit limits** with each other. If Bioregion A reaches its negative limit with Bioregion B, it cannot import more goods until it balances the ledger through exports or shared ecological services.

- **The Common Clearing Unit (The Keynesian Bancor Principle):** Bioregions clear large-scale trade using a shared, non-hoardable clearing unit anchored in real biophysical assets (e.g., kilowatt-hours of renewable energy or gigajoules of embodied capacity), preventing any single bioregion from running endless deficits or dominating through currency speculation.

5. The Brain of the System: Open-Source AI and Biophysical Dashboard

To manage this complexity without falling into the trap of Soviet-style central planning or market chaos, the Commons House operates via an **open-source Stocks & Flows dashboard**:

- **Biophysical Constraints:** Sensors constantly monitor river flows, groundwater tables, air quality, sunshine hours, and food production.

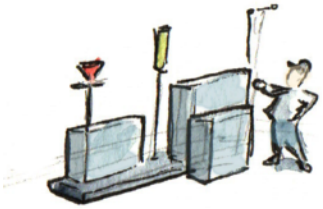
Participatory Ecological Monitoring:Citizens directly monitor their local environment. People measure tree growth to assess forest carbon capture capacity



Others count soil organisms to gauge soil biology, and yet others test river water quality.



Automated Sensor Infrastructure: Permanent IoT sensors constantly record real-time baseline data: groundwater levels, river flow rates, ambient air quality, microclimate shifts, and renewable energy grid performance.



- **Social Input:** Regular community assemblies, workshops, and wellbeing metrics feed human needs, skill availability, and local priorities into the system.

Subjective Wellbeing (SWB) Assessment *– measuring how people perceive and evaluate their own lives and happiness.*



Regular community assemblies



- **Algorithmic Steering:** AI models process this data to provide transparent recommendations. For example, if climate models predict prolonged droughts, the dashboard calculates available labor and material capacities to automatically steer local investments toward drought-resistant crops, silvopasture, or water retention infrastructure, ensuring we only build what the planet and our community can actually sustain.

All of this qualitative social insight and quantitative biophysical data is fed directly into the open-source AI model, allowing the Commons House to dynamically adjust credit incentives, project approvals, and labor allocations based on real planetary and human needs.



6. Land Value Governance & The Georgist Shift

Land is naturally scarce. Historically and today, ownership of land translates directly into power over housing, food, and the means of production. As long as private entities can hoard high-value land and dictate its use, fair and sustainable systems remain out of reach.

- **The City Center Dilemma:** Consider the daycare practice from earlier. A vital service like childcare logically belongs in the city center where families live and work. In today's market, however, prime locations are rarely occupied by community services. Instead, they are snapped up by wealth-accumulating entities, such as corporate lobby firms representing the tobacco industry, who convert speculative capital into urban real estate. These entities hold prime land while contributing little to nothing of true social or ecological value.
- **The Land Value Tax (LVT):** To break this feudal dynamic, the model incorporates a **Land Value Tax based on social and ecological utility**, drawing from the principles of political economist Henry George:
    - **Taxing Unearned Location Value:** Land value is created by the presence, activity, and infrastructure of the community, not by the landlord. The LVT captures this location rent for the Commons rather than allowing private extraction.
    - **Dynamic Social & Ecological Multipliers:** If a corporate lobby firm occupies a prime central plot while generating zero social benefit (or actively causing harm), their Land Value Tax rate skyrockets to an extraordinary level. This financial pressure forces them to either repurpose the property for genuine public utility, pay a heavy remittance back to the Commons, or forfeit the land altogether.
    - **Social Priority Routing:** Conversely, when land is allocated to essential public needs, such as childcare centers, communal gardens, or healthcare practices, the LVT is zeroed out or subsidized. High-value central plots automatically cycle away from idle speculation and into the hands of those providing vital community stewardship.

