

# Natural (and Social) Capital, Democracy, and a New Politics of Survival – 30 December 2025

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## 1: The Necessity of a New Frame in an ‘Old World’: Updating Natural and Social Capitalism as 2025 ends

- **Background to the (still being referenced) Paper**

This first long-form essay (18 pages) positions **natural and social capitalism**, a fuller, more inclusive capitalism, in the **geopolitical context of very late 2025**. Drafting for it a **possible trajectory**. This piece is ‘**the trunk**’ with 9 ‘**branches**’ that contain background and topic-related observations to be published separately (likely sequentially). The trunk moves through the **theory and politics**, and features **strategic conclusions** spun back from **the branches**. Prediction is perilous, but helps plot course. With intent to commit without fear, and to not shrink from telling **plain objective truth**, the **urgency around climate** demanding boldness.

Separating natural and social capitalism’s theory from politics is only possible to extent. The theory has its own politics, and the word ‘capitalism’ is inherently political (as ‘cured’, by being practiced as ‘natural capitalism’). The illiberal far right have weirdly made an enemy of ecology, associating it with democracy, which they also don’t like. Suddenly making natural capitalism their actual doctrinal opposite. Which is remarkable. The world’s natural systems are anyway threatened by **climate change**, and by general and resource-extraction **pollution**. With those effects rolling into **ongoing habitat reduction** and **biodiversity collapse**. Simply, to support the ‘**upper middle-class**’ life-styles of around **1 billion** people (as still growing, and the core cause of the resource scarcity starting to be felt). **The unending environmental degradation** has been in plain sight, and has contributed to the greater loss of trust in institutions for not having better protected communities. As **wealth and income inequality** also obviously increases, widespread anxiety has risen up through well-grounded concerns about ‘affordability’. Late-stage capitalism is seen as having ‘cannibalized’ society. But given life to the vibrant and viable (natural capitalist) counter politics of ‘**affordability**’.

Capitalism must be **inclusive and broad-based** to even be capitalism. Natural and social capitalism offers a possible way to positively organise human society. Were it the system containing the politics, and not a political point of view, society would be more functional.

### (Branch 1): The Structural Weakness of Wealth Inequity, and a ‘Wealth Revenue Tax’

**Instead**, the nihilism of authoritarianism echoes loudly outside the US. Even writing from **Aotearoa New Zealand** (‘**Aotearoa**’), the significance is not the craziness, but the change at margins of mainstream. With a concern for history prompting this compilation of more than four decades’ thought from experience in fields relating to both the subject matter and current moment. **As preview of context**, such fields range from environmental finance, to project and resource management (with that ecological and cultural immersion), across to a decade’s trading in international derivatives markets, bringing financial liquidity and capital markets regulation. Latterly, financial engineering methodology in ‘retrocession (reinsurance) leading to ‘fintec startup’ experience in the ‘CAT’ market. Not so much the international security and diplomacy, just closely related interests. But the practical day to day **management of small**

**businesses** (including at times of difficulty), and **of a wildlife sanctuary for 26 years** (wryly, always at times of difficulty) underpins all experience, and the contents herein. Indeed, Aotearoa's small business conditions have recently been tough, as the global trade instability compounded poor local fiscal policy. In other words, the economics herein are those of a small business practitioner, former derivatives proprietary trader, and perennial wildlife sanctuary developer. It is offered as **a practical approach** to theoretical **natural and social capitalism**, which phrase says most by itself. Saying which, the theory spun through helps introduce the two big topics. **Biodiversity** and **Carbon Credits**. And why they should be recognised as **imperative to global commerce and diplomacy**. And why also they should become **literal foundation** of the world's **financial capital adequacy stack**.

- **Introduction to a theory (of natural and social capitalism)**

There is **nothing older than the new**, and the 'natural and social capitalism' conversation has been happening for millennia. The phrase is for **everyone**, and needs more common use to start making change. While this version clearly does not speak for all natural and social capitalists (everybody), it is energy toward finding **a way to counter climate change and renew democracy**. And toward reestablishing **the broader-based prosperity** squandered by the same politics of unchecked patronage enabling the ongoing environmental exploitation.

Natural and social capitalism can be seen in other bodies of intellectual capital, most notably in the **UN's Sustainable Development Goals (SDG's)** and in the **Environment, Society and Governance (ESG) regulatory suite** as coming into practice e.g. in the **EU, US, UK, and Indonesia**. Heavy duty intellectual work with hundreds, if not thousands of contributors.

Natural and social capitalism is old, but its theory and history diffuse. It goes back through the (ultimately dead-ended) 'property rights debate' of the late 1950s to early 1990's, back further to Henry George (1839-1897) and the eponymous Georgians from the 1880's, further back to the Arcadians of the sixteenth century onward, and further back still, to indigenous systems operating before and since. Epicurus perhaps. But Herman Daly certainly.

#### **(Branch 2): Potted History of Natural Capital Thought, and Daly's 4 Suggestions.**

- **Herman Daly's 4 Suggestions**

**Herman Daly** (1938-2022) was a mid-late 20<sup>th</sup> century "ecological and Georgian economist" (per Wikipedia), who spent 6 years in residence at the World Bank. At his 1994 farewell address to his former colleagues, he issued, to them and the world, his '**4 Suggestions**'.

The first **3** are great. The first is; '**Stop Counting the Consumption of Natural Capital as Income**'. Going straight to the nature of capital, he simultaneously interrogates and assumes definition of 'natural capital'. The third of Daly's Suggestions is also pure natural capital, and for us, is at 2; '**Maximize the Productivity of Natural Capital, and Invest in it**'. Couldn't agree more. This Suggestion is the focus herein, with all four well referenced.

His Suggestion **2**, (here as 3), is; '**Tax Labour and Income Less; Tax Throughput More**'. This 'social capital' thinking validates the description of him as a 'Georgian economist'. The words 'Income' and 'ThroughPut' benefit from more examination (also in **Branch 2** above). The combination of natural and social capital is logical, and Daly starts with 'natural'. His

Fourth Suggestion, as fully quoted in **Branch 2** above, vigorously opposes ‘**international supply chains**’, but offers only a poor alternative. And maybe **gave cover** to undermine his other 3 Suggestions over the following decades. The frequent use of the phrase ‘natural capital’ was notable in the late 80’s to early 90’s financial markets. However, it became less heard, and although never once discredited, seems now only a murmur. Daly’s work did find a way through to **ESG**, likely also to the **SDGs** prior. He must have been disappointed by the state of the world in his later years. **His voice, had it been joined**, could have lifted us from **then 40, now 70 years, of ‘Business as Usual Property Rights Debate’**, which has been **in denial of the torts law case of Rylands v Fletcher (1868)**, and **‘Polluter Pays’**. We also see that bravery is rare, and that ‘The Emperor’s New Clothes’ is an endless loop never arriving.

- **Our own 5 Suggestions (1-3 as compound single Suggestion)**

First; “**Recognise taken for granted, or undervalued Natural, Social or otherwise hidden Form of Capital**”. Second; “**Ensure Longevity for that (and all) Capital**”, Third; “**If beyond the means of other Forms of Capital, use Finance to ensure that Longevity**”. Fourth; “**Reserve Natural Capital, especially Biodiversity, then maintain boundaries of mutual respect between all other Forms of Capital, for growth in all**” (Financial Capital especially benefits from the restraint needed to not predate other forms of capital, ‘Enhanced Democracy’ can balance all capital forms as core function). (‘Biodiversity’, the diversity of biology, is natural capital’s most important capital subset). And Fifth; “**Ensure ‘Dividends’ from each form of Capital go to their respective Communities**” (‘Communities’ conveys mutual capital interest better than ‘Stakeholder’, each circumstance a separate set of details).

These suggestions are generally further examined herein. With a concrete example of the fourth suggestion commonly seen when private parties wish to affect the environment for private benefit. For which democracies develop codes of practice to balance possible benefit to personal or corporate capital, against possible detriment to public capital (in the natural capital and biodiversity affected). In Aotearoa, this is covered by the ‘Resource Management Act’ (RMA 1991). Natural and social capitalism typically underpins resource management (allocation) systems, and can always be used to improve them.

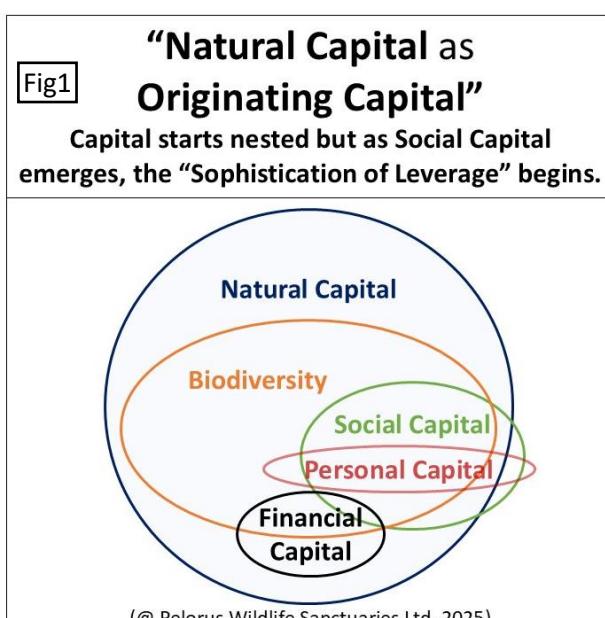
Society does not permit **unrecompensed conversion (theft)** of financial capital or of assets convertible to financial capital. And it discourages **unrecognised conversion, such as with wastage**. These understandings need expansion to include natural and social capital. And on to ‘**personal capital**’. Which starts with **emergent human rights** relating to DNA, extending to personal identity and data, and maybe has still wider future definition. It is not a focus here, but natural capitalism is **un-ironically, ‘pure capitalism’**, with about **a dozen forms of capital** either already or to be mentioned. (**Labour Capital why not?**) ‘Capitalism’ is not, as currently understood, just about **Financial Capital**. New forms remain possible. Yet most are likely already recognised, if not yet adequately. All forms of capital need protection, and can be bolstered. Additional forms can find a place in the two Venn diagrams introduced below.

There are few ‘sharp edges’ to what makes natural, social or other forms of **non-financial capital**. Denomination in coin is not required for **their diversity and quantum** to have economic merit. But times are also when natural, or another form of **hidden capital**, can itself benefit from fair sale, possibly for reinvestment. **Branch 3** also covers cooperative user-ownership and open-source models as natural capitalist methods for capital organisation.

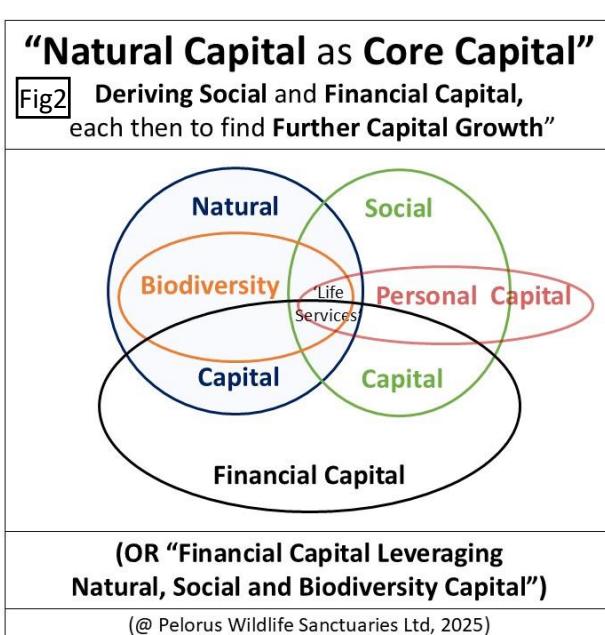
### **(Branch 3): “What Makes Natural Capital? (The Clear Case of Construction Sand)”**

Natural capitalism could also be called ‘provenance’, ‘pure’, ‘true’, or ‘real’ capitalism. Its point is to recognise then **maintain or accumulate the broadest possible range of capital stocks**, as extends also to **(moderated) financial capital**. So that each form of capital can ‘pay a dividend’ to its respective ‘community’, a tapestry of interests set by circumstances. While the neologisms suggested just above accurately describe a system of different forms of capital working together for mutual benefit, the three ‘forms’ on which all others are pinned, are natural, social and financial capital, the latter inferred. Therefore, **the moniker favoured herein is ‘natural and social capitalism’**, with contraction increasing as appreciation grows that natural capitalism also embodies social, financial, personal and all other forms of capital.

#### • The Multi Capital Venn Diagrams



‘Social capital’ ties closely to natural capital, and crosses over to (solid) public capital. Democracy, security and the rule of law are huge parts of it, So too, education, public health and community organisations.



Natural capitalism still evolves. These 2 ‘Multi-Capital’ Venn Diagrams are offered to simplistically, but effectively summarise the capital relationships as believed they first originate (Fig1), and then as they have become in modern times (Fig2). The relative sizes of the objects are naturally abstracted, with financial the most volatile, and ‘personal capital’ oversized to be seen. With ‘biodiversity’ in reality only able to get relatively smaller (therefore bringing us the obligation to ‘preserve its proportions’). Natural capital is similarly limited, with the others’ leverage adjusted for its keep also.

Markets are nested within these systems, and we already live inside markets; what has been missing is the ability to measure the **full cost and consequence** of actions within the systems. New surveillance technologies (otherwise possibly invasive) may offer opportunity to improve measure.

Financial systems cannot function without Society. Both are ultimately dependent on ecological stability and natural resources. Financial capital leverages from Natural and Social Capital, and from the continuity of Biodiversity.

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## 2: The Core Idea: Nature as Capital, People as Natural Capitalists Acting (together) in the Environment

Generally, we need a **deeper reframing** of the relationship between **humans, markets, and the nature** within which we live. A way to value it as **essential infrastructure**. Clean water, stable soils, pollinators, forests and even predictable climate, not as luxuries but **as sole foundation on which any broad prosperity can be assured**. A large body of data sees financial value embodied within natural systems. A price tag. It starts with '**Life Services**'; oxygen and clean water, quality in the soils, materials for food and shelter. Ecosystems functioning as providers of services, stability, and future opportunity. Forests not just as trees, but **carbon monuments, rainfall generators, air cleaners, and matrices of biodiversity** that provide public health benefits going also to **medicinal cures and life expectancy**, and already going to **mental health and happiness**. The aesthetic benefits of greenery (and good architecture), even the **comfort and shade** of trees, all known to **increase productivity**.

Societies are hoped will become **self-consciously natural capitalist** -- people as actors with behaviour reflecting a sense of **intergenerational stewardship**. Natural and social capitalism aims high for **true consumer affordability of choice**, to be able to value the environment by choice of products with better provenance, even if sometimes, short-term more expensive. **Tax system reform** aided by education can stop the race to the bottom that is both 'cheap' calories costing diabetes, and 'cheap' products costing natural or social capital instead. Henry George first drew an audience in the '**Gilded Age**', an era also unfairly dividing opportunity.

Natural capitalism also concerns recognising nature as an **asset to be maintained and grown (or indeed, reinstated)**. With the same expectations as normal asset treatments. Accounting correctly for capital and its revenue is strategic. In Aotearoa, three areas of geographical and cultural significance have been given 'legal personhood' for best chances. (per **Branch 3**)

Investing in natural capital - **reforesting land, restoring soils, rewilding waterways and wetlands**, even finding clean ways to **store more carbon** - are bets on returns from resilience and wellbeing, with those benefits flowing into financial economies (as usually unrewarded). They are also bets (some made long ago) on the **emergence of powerful financial markets**, which, while still happening, is frustratingly slow, and ongoingly prey to political hobbling.

Although we have every ability as a species to take command of our environment and act as **planetary guardians**, we appear to be opting out, distracted first by feel-good **consumerism**, more recently by **manufactured division**. Only **ESG**, as rare sole measure of responsibility, **still attempts to graft lungs, a liver, and a heart to the economic corpus**. But while it has been a valiant attempt, the late-stage corpus still looks like it belongs to 'Monty Burns'.

Even human habitat is dwindling in quality and availability, mainly by effects from climate change. Causing retreat from temperatures over 50C/122F, from areas prone to flooding or landslides, and from the coast. Bankrupting insurance companies. But **economics, law and politics** allow such benefits **to be removed from the human collective as private financial wealth** (it turns out in very few hands). The ubiquity of plastics and 'forever chemicals' in the ecosphere are just further examples of **terrible cost benefit analysis**. All capital forms, social, financial, natural, personal, public, biodiversity and more, are reduced by such lack of

care. Requiring later restoration, to the extent even possible. With bright spots like the return of fish to Tokyo's inner-city waterways, and to the Thames, always widely celebrated.

Yet damage is ongoing, from urban centres to remote wilds, equally in oceans. With satellite images now indicating the Amazon rainforest reduced to below a third of its original full self. Protection is a start, **but reforestation in related scale must also begin**, for which there are solid natural capitalist models (expanded in **Branch 7** below). Yet for rules to have meaning, **accountability requires heft**, particularly for actions in **oceans and remote areas**.

### • Provenance, Data and Pricing

Imagine a future in which people will not buy a product without knowing its true and precise '**provenance**', where it comes from, how it is made, at each stage what carbon (or other) was emitted, water polluted, or resources consumed. And which people or parts of society were hurt, long and short term? In Aotearoa, 'mauri' is more expansive, but close to 'provenance'.

This is the essential shift that natural and social capitalism demands. '**Provenance (or Full) Capitalism**'. First identifying/recognising, then pricing **benefits into** the market, and **harms out**. With better **ecological account** giving a more complete **economic picture**. To replenish and use all recognised capital more efficiently. And finally, when **nature** must be **consumed**, to find a good measure of **equivalent value in the hands of its true (greater) community**.

But again, given decades of increasing competition for resources, discovery of value in natural capital is inevitable as its limits are pushed, forcing **consumer prices ever higher** in case studies from **coffee to copper**. As natural capital pricing becomes **built-in**, pressure may ease. But **until simple adjustments to the Tax System**, repricing will **continue** to be **regressive and inequitable**. **Branch 1** also covers Daly's 2<sup>nd</sup> Suggestion and posits a more viable alternative to Henry George's logical but unwieldy '**land tax**' (with its inevitable exemptions). For this age's financial wealth, a '**Wealth Revenue Tax**' focuses on 'unearned revenue' ('**money making money**'), and targets only the super-wealthy. Just an unearned revenue assumption on an annual wealth total, to barely delay super-yacht purchases. **George and Daly** would have used these funds too, to reduce burdens on low to mid income workers. With healthcare, education and targeted allowances also as social capital and economic base.

Daly was right to warn of the **negative environmental effects of the international supply chain**. And that local trade is less bad. However, international trade assists vital diplomatic interests, and competitive advantage makes it inevitable, with benefits when not ruining society or the environment. Its improvement is the only strategy left, and possible by new agreements as to '**Process Transparency**'. This is anyway embedded in '**ESG**' (as barely practiced), but over too much time across too few participants to offer a sufficient response to **climate change** (as has become **dire risk** to all forms of capital). But with only Turkey yet to sign the Paris Accord, the UN's job is about continuity. Instead, **animated direct diplomacy** can leave 'hardship' thinking behind, to **entreaty money-making opportunities**. A '**market effects transparency deal**' **must be done alongside a 'Carbon deal' to result in global prosperity**. Transparency is coming anyway by analysis of ever more imagery. not just from satellite, but from AI-sourced geolocatable security, industrial, drone and social media feeds.

**Agreements** might bring forward the data-filled future with opportunities for accumulators of 'supply-chain effects data' to compete as 'provenance verifiers' issuing **product or provider ratings**. Independent of vendors and 'smart-labelling', products can be **identified by phone**

**camera** in supermarkets or stores, to link to an offsite interpretation of its **supply chain effects**. Transparency reduces costs, improves exposed processes, and produces **rational logistics**. Natural capitalism favours **optimized, transparent supply chains**. **Preferring local to global**. Models that geolocate targeted global resources might include environmental costings to extract the resource. But models do not yet factor the costs of moving extracted resources around the world (often a few times); to the multiple points of manufacture and process, eventually to the point of product use. And finally, significantly, to post-use disposal as waste, or less likely, recovery by recycling. If consumers were **informed** of such supply chain detail, and were well-enough **resourced**, they could make choices responsive **to both**.

Right now, online accounting software's vast troves of data are capable of providing a good secondary picture of commercial interaction with the environment (as anonymized, and data privacy/usage rights sorted). A good first step, but such data stops at borders, and lacks depth.

Unfounded greenwashing by suppliers should be prosecuted, and "supply chain visibility" regulation introduced. Usually around 80% of an economy, small and medium businesses, can be considered foremost in any such change, but are first, the clients of much larger interests. At next stage, defect revelation may have funding tracks for process improvement.

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### **3. Systems Thinking: Weaving Ecological, Resource Management, Social, Economic and Regulatory Threads**

**Natural capitalism is a systems philosophy** — not "anti-market," but "market-plus", even more, "markets made whole". It is optimistic common sense without complex rule-sets. Aiming not only to survive but thrive in a healthy environment, with success measured partly in demographics over generations. Yet capable of showing progress over short and medium terms. Natural capitalism is an old, yet advanced form of capitalism. Many businesses already have **natural capitalist basis** to their **resource management** protocols, usually because it is cheaper. Beyond fixing plain emissions, an example of staple energy efficiency is the better fluidity physics of pumping through Y not T piping junctions. It is an example of identifying structural outflows of energy for their redirection or recapture, with '**Closed loop design**' addressing input/output wastage. Recent further **optimisation** of corporate processes has been vastly improved by **big data and AI**. Therefore, in general, **frugality** is the prime natural capital doctrinal virtue. But in a society abundant to ever fewer, **frugality must be affordable**. **True affordability is having choice**. **With inner workings never forgotten**.

For example, organic and mutually beneficial mixed agricultural land practices represent **modern innovation on an ancient base**, and are **natural capitalist**. Logic says more food should be produced this way. Yet, natural capitalism relies on democracy becoming advanced enough to fully embody it. When markets can finally be given reinforcing pricing incentives.

Natural and social capitalism as expressed herein, also relies on further buy-in from the **international capital markets**. **Solid Carbon Credits (SCCs)** are introduced herein as a product of 'inherent capital value', to be widely embraced, even at retail. **The call is for a 'short circuit'** to get the results needed to stave off the worst of the climate change damage, and while doing it, shore up society and commit more assets to biodiversity. **A majority call**.

**Climate change** is the most urgent of **many systemic problems**. Habitat loss is maybe next. Both can be addressed by native reforestation. The native biodiversity opportunity, once seen,

cannot be unseen for results over all other methods of carbon ‘sequestration’ (storage). Either way, carbon storage is best defined as ‘**building solid carbon monuments**’, and needs tons of capital. So too does natural catastrophe reinsurance, not a coincidence given enough overlap to make it the same extended pool of capital, a theme worthy of repetition.

But to engineer solutions for such complex issues needs sophisticated democratic systems operating with the rule of law, specific regulation, property rights, liquid financial markets, and strong scientific communities. However, ever-more **extreme environmental physics (bigger storms and floods)** indicates we are anyway failing at Resource Management, ‘Custodianship/Stewardship’ or in Aotearoa, ‘**Kaitiakitanga**’ (‘Kaitiakitaka’ at ‘Pouakai’).

One principle should be simple: **that what gets valued, gets protected**. But assessing value needs information, without which commodity market-pricing mechanisms will (more likely) overestimate supply prospects, but can also create bubbles. Better-informed markets self-regulate to some extent, but if not enough, market participants may next welcome, or even demand good regulation. Which is best with few and clear goals to establish equal ground, and to give comfort to help build liquidity. With that governance also easier when market and regulator work together. Yet the market must deal with whom they have, at least for a ‘term’.

### • And so, on to Social Capital

Alongside natural capital sits **social capital**: the trust, cohesion, and civic fabric that allows communities to act collectively, and with ‘crowd sense’, as made possible and moderated, by systems of democracy. **Without the social capital of democracy and the rule of law, even the notion of environment is difficult to contemplate**. But getting there may require better underlying social acknowledgment. For example, the work women do in society adds to social capital but remains under-funded by any measure. **Maybe it takes recognizing natural capital to recognize social capital, so that both can attain their better potential?**

Prime social capital items are **universal publicly funded healthcare and education**, always as economically foundational. With the practical limitations understood by society. And the **private sector keeping the public sector honest in respect of labour capital cost**. Otherwise, monopoly power will work for taxpayers to achieve what the private sector cannot by itself.

**Private** health provision is **inevitable as a right**, and is therefore best **run alongside** the **public** health system for efficient resource use. Examples are common of private hospitals taking overflow from public accident and emergency departments, and of both sets of operating theatres being run together as a pool, **for better mutual capital return**. Universal public healthcare is essential social and human capital for a modern world. And makes bank for billionaires by increasing the potential number of healthy customers happy to recycle part of their newfound social well-being, and provide them the funds needed to pay for their CO<sub>2</sub>.

Countries with public health systems find them popular, economically essential, unifying and foundational. Japan demands **free annual checkups** with ‘work-ons for next time’. There is no fiscal coercion, but an appeal to health, and to the cultural anticipation of the coming interview. So, in that moment, personal capital ranks below social, cultural and financial capital. But when put as a logical choice, no inconvenience at all, with **health benefits** and, additional layers of better affordability all around. Again, **natural capitalism expects more than usual of ‘affordability’**, given the need to either **externalise or absorb** the costs of **environmental and social remedy**, and iterate toward the most efficient constants possible.

Some countries have their governments build everything, not just buildings and roads, but trains, buses and ferries. Democracies tend to have ‘a public core and private mantle’. But whether public or private, organisations must accrue the human and intellectual capital vital for continuity (long term), and for response action per natural disasters (or pandemics etc).

- **The Primacy of Biodiversity (Diversity of Biology)**

Natural and social capital are a **survival twinset** -- mutually reinforcing, inseparable, vital, and forged in the greater public interest. Natural capital, **the food, water and shelter of it all**, outranks social capital in due order of consideration. As **biodiversity**, given its vitality to human survival and the sheer irreplaceability of species, it **outranks everything**. Social capitalism is not properly based without natural capitalism. Industrialised economies usually miss the **primacy of ‘nature’** over all other forms of capital, responding reactively only as mistakes are made, often at great cost. With those same mistakes then made over and over.

**The world is a web of locally native and endemic biodiversity**, as permeated by exotic. The first consideration of climate change should be for native biodiversity. ‘It is where it all happens’. Primacy is logical because of the finality of species extinctions, numerous species known to become extinct even without our notice. As great genetic bank, biodiversity has benefits for humanity present and future. And nature’s form usually cannot be reinstated. Yet replacement wild habitat (humans positively engaged) is urgently needed. Making money by recovering native biodiversity from scratch, by for example, replanting or rewilding recently burned or felled ancient slow-growing forests, was always said to be impossible. But natural and social capitalist models have long existed, and are only subject to a functioning **Solid Carbon Credit system**. Wealth removed but not the potential. As Daly said, ‘Maximize the Productivity of Natural Capital, **and Invest in it**’. ‘**Pouakai**’, as project testing this theory, was mentioned above in respect of **kaitiakitaka** and **mauri**, with more at **Branch 9 (below)**.

**Biodiversity is like a battery losing capacity with each species extinction. Its best level, its current level.** This accounting of natural capitalism is dedicated to the notion that keeping such a ‘battery charged’, although undetectable in most people’s lives, maintains the very diversity of life on earth, and so is a vulnerable capital item in great need of recognition. With **pure logic** doubling as **faith** in this respect (if you will, but anyway in stark relief to the only alternative offered, the disreputable cult of money that is **late-stage capitalism**). Nature first!

- **The Urgency and the Information**

The time is now, and the markets, far from rescuing us, are turning inward on us. **Positive visions rooted in community and nature are needed instead**. Natural capitalism offers structure for **shared benefit and enlightened self-interest**. It is positive and uncontroversial for general uptake, where people recognise themselves and their communities. It is not about sacrifice or guilt, but about embracing smarter systems that **align personal and financial wellbeing with the health of the biosphere and those communities**. And by using **well-informed markets** to make transitions. But which has **expectation of good government** to look after the interests of citizens, as sadly has become an open question, not just in the US.

The **extent of environmental loss** (and realisation of rarity) is finally notable enough to affect market pricing. But although real, the **market pricing signals are late**, and still not loud. Years of (originally just Russian) **mis and disinformation**, have also been layered on

**the campaign against expertise**, as now operated between **Russia, China, Project 2025, US far right media et al. It is ubiquitous and deep**, bots and useful idiots broadcasting **noise over**, amongst other things, the still **modest market-pricing signals**. Increasingly enabling **removal from us all** of natural and social capital, **unpaid for, so long as going unnoticed**.

It is especially time again for ‘truth’. In fact, why would ‘**objective truth**’ not be ‘**recognised capital with longevity needing assurance by financial means**’? ‘**Verifiability**’ benefits all by **increasing liquidity**, as used to be common sense. **Common reality is transactionally valuable**. AI is set to further debase it. Lying is free speech, but making money by, with intent, picking apart the seams that bind society, seems less clear. Selling harm for profit is usually taxed. **Tobacco, alcohol and lying?** Taxing professional lying to pay for reparation by public information with essential counter-messaging - the ‘**painting over of graffiti**’?

And still some Resource Management systems use ‘competitive science’, for ‘two-sides of science’ (or ‘science for sale’), experienced to undermine people’s belief in the scientific consensus needed for long-term planning. As further observation, it does not seem fair to make local interests pay for unforeseen and expensive defence of their environment, that afterwards feels performative. Science should generally weigh first for environmental and public good. Only trustable information can educate behaviour change and moderate natural capital consumption. **A comeback is needed of public science, and generally, of expertise.**

## And to Markets and Regulation Generally

The key function of markets is to **find ‘price for size’**, with **markets many times better** at this than the next best method. But again, **to be capable of pricing for the long term, markets must be adequately informed**. This is usually achieved by combining **regulation, oversight and peer-group/industry measures**. In most international capital markets, regulatory models have been historically improved, with some systems exceptional.

For natural and social capitalism, **European financial institution capital adequacy** is the best regulatory example. It operates in many forms, including ‘**Solvency II**’, by default in the US and UK, and also elsewhere in the world. It took decades to **discover the appropriate capital levels** (with such assessment ongoing). It was also a struggle to overcome **the will and lobbying of financial institutions who feared cost in additional capital requirements** (mistakenly it seems). It started in securities and banking, and moved through to insurance and finally reinsurance. So far, bank stakeholders seem better protected, and system integrity improved. Despite current concerns about liquidity of some sectors, **locally banks seem ever more profitable** (the nature of historical and appropriate capital rates of return are also discussed in **Branch 3**). **The catastrophe reinsurance sector** is also now responsible for its own future, and may (or may not) choose to attract the capital needed to make a difference.

In the **accounting world** also, there have been ‘**IFSR**’ changes and updates to reflect and better allow for these **capital regulation changes**. Proving that the nature and structure of financial capital is ever evolving, and can accept new understandings. **IFSR with Solvency II** (et al) are positive as long as they survive, and continue to adapt sympathetically. There is concern only that unfavorable politics leads to the same deconstruction experienced in the US. This sort of infrastructure may not be easily replaced if lost, with this paper making the opposite case that the infrastructure be **further extended** to make capital allowance for **Solid Carbon Credits (SCCs)**, And making the further case that such recognition be extended to **Biodiversity**, as internationally supported (per Bibliography), with more on this in **Branch 7**.

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## 4. The Change in Politics and its Effects on Nature

- Present Circumstances, yet still Potential for Grand Solutions

The perennial **steady erosion** of natural and social capital stepped up with **humanity's recent 'unplugging' by social media and Covid, with both effects lingering**. Bad things have continued in politics, as disappointed people are further enraged and misdirected by culpable forces in media environments that divide society, and prey on psychology to pump up a grievance economy that makes shareholders money but everyone else miserable and worse-off. As 'ESG' cannot patch something like this, the call remains for systemic change.

Because natural and social capitalism depends not just on democracy, but on an '**enlightened democracy' not yet attained**'. However, it was generally heading that way, as evidenced by SDGs to ESG to Biden. But it **had no name**, was not noticed, and therefore, **could not be popular**. And even with results to show, was always ineptly publicized. **And it arrived late, was never 'the actual thing', and did not stem the continued growth in wealth inequality and environmental damage** that has ultimately led to such common lack of **affordability**. **ESG, as representing natural and social capitalism**, with its termination likely in the US (by itself or alongside the SEC), urgently needs a public relations campaign.

In most things, but particularly for its financial markets heft -- **critical for climate change response** -- the **US is the most important country in the world, but the EU has worked more assiduously on its democracy**. Europeans now look across to see at best, an extreme cult of money infiltrating politics, religion and tech, as US leaders present as unmoored from all moral sense. The US will be unreliable for no-one knows how long. Russia is still a threat. Yet for the agenda herein, Canada and Indonesia seem newly instrumental. A China approach is below. **But it is the EU with the defining opportunity to leverage its democratic machinery, including its financial markets regulation**. The EU anyway needs climate change action to address its own people's concerns, otherwise (and anyway) facing the mounting tide of demographic pressure from ever-hotter Africa, Middle East and West Asia.

While the US administration openly seeks to export its brand of dark politics to the world, 'Big US AI' acts undemocratically to achieve for itself 'no emissions nor regulation'. With AI posing a systemic risk virtually no-one finds acceptable, and Data Centres at any more scale, without 'instant nuclear power', needing **SCCs (Solid Carbon)** to not set the planet on fire. **Indeed, a Carbon Economy could foster an EU-regulated AI industry** (as even based outside it). With **Shanghai needing its own supply of SCCs**. But the data process location is key in AI, with data privacy and access issues still badly unresolved anywhere. Yet **the open-source models of Chinese AI are intriguing**. And Singapore seems likely to find a niche.

- And This Piece of Pure Politics

The alternative future available to the US in 2024 was almost certainly in the best interests of the vast majority of the globe. For everyone except autocrats and stakeholders of certain corporations, not even crypto owners. For this reason, the **historical fracturing** of the moment cannot be underestimated. The US is 'on a hospital gurney having shot itself in the head'. Like the UK post Brexit, but worse. The moral high ground if ever held, irrecoverable, the dollar one year into many of descent. But only dumb policy can foil good demographics.

For a while, the US must be developed around. The Biden Administration was closest ever to natural and social capitalism. **ESG** deals are still getting done, but the **US** is starting to lose the history and policy to the science denial, delusion, and reactionariness of **Project 2025**. As designed to roll back representative democracy to permanently entrench a form of minority rule. Amazingly, the Supreme Court, Big Tech, Big Media, even Congress, seem good with it, the funding networks out in the open. Leaving the US with a mess to clean up and years of uncertain ‘end of empire’ struggle ahead for an old yet young democracy. With Project 2025 already more than halfway through its dismantling of the administrative state, and the same funding networks set to feast on multiple corpses. But as hints of collapse grow, the always to be insane path to the mid-terms knows no bounds. ‘Too much too fast’ the strategy as always.

And a surprising proportion of the US corporate, legal and academic world has repositioned toward this ‘**dark spiral**’, so unnerving for its 1930’s tones. A dozen quislings out and proud, and all CEOs aware of the stakes. And yes, stock values do rely more on corporate capital, than on the (anti-capital) patronage systems that have been on ever more vulgar display.

It takes years for information campaigns to work to change behaviour. And despite hard-working bureaucrats working to **fulfil the responsibilities of international agreements**, it must be the **political governments obliged to instigate actual change**. **Politicians** must be **elected on an agenda** to be sure of acting on it, with **candidates needed** for the task.

**All current politics is for change** (a good thing), with disagreement only as to how ‘change’ looks and feels. The new politics’ likely impact on the environment is dire and dystopic. And so sad that (hopefully until now), all positive agendas countering the madness were without a simple coherent script with human connection. As hampered by lack of winning messengers. **Natural and social capitalism** can underpin ‘Affordability’ as a political movement, which can be ‘singular’ with natural and social capitalism the intellectual weight behind it. **So, natural and social capitalism can be the fight -- both end-goal, and means to get there**. Even if (for now) known as ‘Affordability’, it is ‘**change**’ as a unifying politics ‘**with no past**’. It is the middle ground and ‘**the Commons**’, where most people find themselves.

The ‘affordability’ of natural capitalism is ‘**multi-layered**’, for nature, society, and people. Yet even with benefits from natural capitalism, without knowledge, people cannot self-identify as ‘natural capitalist’ (or name of same meaning). This will need **gradualist messaging on repeat**. ‘**Forms of capital**’ can be for enthusiasts. But generally, people understand **value**, and the **common sense of making allowance to budget for means** – even if **not so true of policy makers**. And with that knowledge, naturally consumers will **welcome** economic opportunities to make decisions they consider better for the environment.

Although natural capitalism offers opportunities for trail-blazing private brand-building, **private capital has its own protocols**. **Societies should lead markets to change**. Climate change response and product accountability must be put beyond political or media reach. Natural capitalism is a bet on **information as empowerment**, knowledge as power **in the hands of incentivised consumers equipped to use it well**. A good governance, provenance economy with every level of ‘product entanglement’ exposed and accountable to consumers.

#### **(Branch 4): The Novelty of Democracy and the Current State of Social Communication**

Natural capitalism can be **the system itself**, as political debate largely concerns tuning capital boundaries. From international treaties to crime and punishment. With **cultural capital** also

finding representation. Natural capitalism is ‘**conservative**’ in democracy’s **security** interest, ‘**liberal**’ as to **personal freedoms** and **free speech**, yet **mainly** ‘public interest over private’, and always ‘**biodiversity first**’. It is ‘**bootstrings capitalism**’ for best possible interaction of capital interests to mutually benefit all the forms. But with the situational awareness and deep planning available only to coherent societies. It is ‘**fiscally conservative**’ in all forms of capital but ‘**financial**’, a democratic construct anyway. Excessive national debt externally held, will lead to eventual home currency devaluation and inflation. Yet finance also needs greater financial leverage with higher acceptable risks meeting the scale of climate change.

### • **Environment, Society (Diversity Equity, Inclusion), & Governance**

**ESG** has been an ‘**add-on**’ to ‘**late-stage capitalism**’ to bridge a complete overhaul. But establishing trust needs public engagement. And still **too few rules** and insufficient **oversight** can allow corrupt examples to attract all attention. Systemic change (one version proposed herein) is needed to best combat climate change and protect biodiversity. But failure now in **ESG** could make these goals lost causes, going with them the chance for natural and social capitalism to reinvigorate human society. **2026** is first in a string of very consequential years.

Just last year, the majority of global corporate CEOs were somewhere between accepting and enthusiastically embracing ESG, with most seeing an opportunity for brand enhancement as would seem good business sense, if also assuming well-informed consumers. But now Project 2025 aims to end the Securities & Exchange Commission (‘SEC’), which administers ESG.

Difficult European elections also seem ever-present, with bad policy possible there too. UK also. Thankfully, Europeans still seem concerned about the climate. Aotearoa New Zealand turns out to be an adoption laggard, with a political government also apparently prostrate to its own special interests, as is perceived to have become standard in so many other countries.

But thankfully, even if regulation is removed, **most CEOs will continue to invest in ESG**. **New markets** will continue to open up and compete. Indonesia’s willing introduction of ESG seems notable. If well-designed, ESG not only improves lives but makes money. This ability might be increasingly needed in the US, as companies with ESG programs find competitors happy to have costs cut by deregulation, and by an Administration indifferent to pollution.

Anyway, not only for their shareholders, clients and suppliers, but for the environments in which they (we) all live and work, **CEOs should continue with ESG**. But this may mean, in the US, and likely beyond, resisting possible government messaging to consumers that ‘ESG is just as bad as DEI’ or ‘woke’ – as per Trump numerous times and Project 2025. Except this bubble feels may finally be bursting. Separately, also unifying is that almost everyone can now agree that ‘summarily cancelling someone for not much’ is bad, no matter who does it.

**But the politics that threatens natural capital and the environment will persist.** And resurgent **global militarisation** also now syphons resources away from renewable energy infrastructure. **As ever more rare earths and copper** and other rare minerals are extracted from, and processed in sensitive environments. Planting trees can delay the need for energy transformation, but it is desirable to make power supply networks lower carbon, and more distributed for reliability. **Indeed, if China is still selling its rare earths ‘cheap’...?**

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## 5. The Need for a Single International Carbon Market

- **‘Offset’ and ‘Inherent Capital Value’ Markets (to introduce Solid Carbon Credits)**

**Whole new offset markets are sometimes needed** to provide a means to transition away from the identified negative effects of any market important enough to warrant this treatment.

And as so limited, there have been **successful emissions offset markets**, two last century, first for sulphur dioxide, to drastically reduce acid rain (for an ‘unqualified success’), then for hydro fluorocarbons, closing the hole in the ozone layer (while creating new but lesser problems, for a ‘qualified success’). Maybe others, but both those ‘cap and trade’ systems ‘worked’ to reduce/eliminate the limited problems at the core of their respective missions.

Technically, ‘Cap and trade’ emissions credit systems **start from a point in time with a starting (indexing) value**, followed by calendar updates **to measure change in that value**, with such **difference equalling the total holding or deficit**. As Tradable in the market. Net emitters as thereby obliged to buy credits, becoming incentivised to upgrade industrial plant.

However, ‘**Offset Value**’ for notional toxic gas emissions is **one thing**; the physical presence of **Solid Carbon Credits is quite another**. ‘**Inherent capital value**’ also factors the cost of **real estate behind forests or other permanent new carbon store**. making such carbon **Real**, with solid mass anyway calculated by forest carbon field measurement (as converted to Co2)

Non-physical offsets, effectively one-off ‘rights to emit’ with internal value, do not attach property, and need not be transferable. But if so, should be realistically priced to reflect their lack of verifiability, and that governments always give huge quantities away. The early Kyoto Protocol carbon markets effectively gifted ‘hot air’ credits to ‘Big Oil’, and to Russia given the 1990 start point. Natural capitalists (including enlightened shareholders) support practices and laws that anyway end toxic emissions and regulate others (Rylands v Fletcher put into law). Real value is in visible, touchable carbon monuments anchored on earth as ‘machine’, a pricing mechanism driving terrestrial monuments to regulate atmospheric Co2 monuments.

#### **(Branch 5): Initial Overview of Carbon Credit Markets (Globally)**

A tokenised system backed by **hard carbon value** may work well, also as first step toward the natural capitalist ‘curing’ of Bitcoin needed for its broader acceptability in markets.

#### **(Branch 6): Crypto and Natural and Social Capital, ‘SCCs as Securitized NFTs’**

- **Solid (State) Carbon Credits (SCCs)**

Offset markets have so far been achieved by international agreement in a realm removed from consumers. However, **the carbon credit market** is multiples bigger than anything prior, and must be **backbone and avatar of the systemic change** needed to counter climate change. As well-established and consistently regulated, **SCCs** must become sufficiently accepted by consumers (as ideally explained to them by their governments) to rapidly become considered **a liquid store of value and prime form of exchange in common trade**.

**Rapid re-development of an apparently dysfunctional and un-internationalised carbon credit market is a global emergency.** Because, **carbon dioxide**, as the largest emissions

market, **despite a quarter century**, cannot be described as a success. **Exposure of lack of capital value in ‘rights of use’ credits and of false tonnage claims** for ‘sequestered’ (newly stored) carbon dioxide in new projects, and the constant political meddling, have so far led to a net failure of mission in all carbon credit markets. The price charts in **Branch 5** reveal net capital destruction. With no chart sloping upward, left to right, a new approach is needed.

This is first achieved by the semantic denomination of carbon credits, not as tons of carbon dioxide in the atmosphere, but as solid carbon mass on earth (as measured per existing or improved field measurement for forests, and ‘as on-shore’ if aquatic), then with conversion to X.Y tons of Co2 for emitters. As all domestic carbon markets globally are too small, divided, and conditional to trade with liquidity, they should be pooled into one international market. A single, transparent and internationalized market would be more dynamic, liquid and fair.

Carbon is a complex market with own ‘stack’. Price inputs and conditions all derive from the **Method** to accumulate a measure of carbon mass. **(1) Time to make; (2) Net Cost to make; and (3) Half-life of; that Carbon Mass.** Diamonds may be forever, but Biochar is not (unless composite within bodies continuous, such as forest soils). With **(4) ‘Alpha’**: Usually **Biodiversity**. Methods detrimental to biodiversity will eventually attract **negative alpha**. A **Carbon Yield Curve** can be built by relating **Price** to a **Method’s** half-life and other profile. And will fast become instinct for portfolio managers and traders. **Methods** include ‘Native Forest’, ‘Exotic Forest’, ‘Mariculture’, ‘Biochar’ and ‘Mineral Carbonation’. A ‘**Sub-Index**’ comprises all of a **Method’s** unique transactions. **The SCC Prime Index then totals all the Sub-Indices**. Meeting carbon targets no doubt means using methods more expensive, or with shorter half-lives than the monumental methods that will end up regulating atmospheric CO<sub>2</sub>.

As to their role in **underwriting trade**, **SCCs have no debt**, and trading nations would **welcome any premium** in their holding; Moreover, **SCCs** (biodiversity credits also), **far from being dirty to extract like Gold**, can also be ‘forever’ in human terms, and at scale meaningful enough to make an **existential difference concerning climate change**, again unlike **Gold**, which has no such purpose. **Nor are SCCs energy hungry**, inefficient and slow (and quantum computing-vulnerable), as **Bitcoin** still is; (with more back in **Branch 6**).

## • International Agreements – SCCs and Transparency

Again, either by extension of UN treaty or as new commercial treaty between nations, two international agreements are needed. ‘**SCCs**’ as ‘Ying’ to; ‘**Transparency Yang**’. **SCCs** is best systemically based in Europe as **taken on wholly by the EU with (tacit) UN support**.

The **EU has good potential strategic partners for SCCs**. Canada and Indonesia both have sensitivity to **ESG**, with significant landmass for an **SCC pool**. **SCCs** should offer **monetary incentive** to sign on for **Transparency** (and penalty for not). With **SCCs** literally grown on the continents where located, **SCCs** can be the global trading currency to **incrementally reduce USD dominance**. What better international currency can there be to underpin trade, than a measurable physical object with inherent value and held in trust (like gold), but sufficiently scalable, with vital function for best human survival, and neutral in underpinning all world economies by underpinning the climate? **It is global currency fit to accept all reserves**. The ledger would be ‘based’ in a single financial city, and **traded internationally**. Such a Carbon deal offers China agency to bring the end of USD hegemony by investment within its own borders. Brazil and India same. Yet the US can be offered the chance to keep

more influence than any other country in the **transition from USD to SCCs**. A different administration may have seen this as the considerable opportunity it has arguably become.

### **(Branch 7): Biodiversity, Carbon and Reforestation**

China has the world's largest national industrial base, and amongst all less than pristine industries, its rare earth capacity has a truly awful environmental footprint (google 'Bayan Obo, Baotou' for a vision of hell -- mining and processing also producing radioactive waste). China subsidizes this market (80%+?) to dominate (90%?) world supply. Logically, prices would go higher with transparency, which is usually the desired eventual outcome. **China's engagement is needed** in both agreements, SCCs and Transparency. **SCCs** should appeal, but **Transparency** too makes money, limitlessly by emergent efficiencies, and would be popular.

#### **• A Grand Carbon Solution, for Native Forests and Oceans**

Oceans are an enormous 'sink' for carbon dioxide. But with seawater saturated with carbon dioxide already acidified, the next step could be its release. Yet data indicates that a healthy marine environment, has **greater 'brine carbon' storage capacity**, and naturally, there is solid carbon in the infinite biota, detritus and mortal remains of oceanic biomass. And ecosystems are currently reduced (except for protected whales). Together indicating that with challenges around verifiability resolved, **SCCs could measure increase of biomass in new marine reserves**, as a **fast-scaling solid carbon resource** likely also good for brine carbon.

As techniques, likely including mariculture, are tested successfully in **inner coastal marine reserves**, methodology **could even extend to whole oceans** (in the south). With verifiability needing data from places hard to get to, fishing industries are there anyway, and regardless, part of any solution. Converting fishing to monitoring might be safer and more profitable.

**The EU** has been the world's truest adherent of natural and social capitalism, and already runs a **carbon credit exchange and ESG 'operating system'**. It is the **only contender to build, regulate and verify a global carbon credit market** as so underwritten by terrestrial (and aquatic) solid carbon, and as supported by a community of nations. Agreements can tie **SCCs to Transparency** (of industry's effects on the environment). Transparency, as bilateral is not 'based' anywhere. It concerns **data collection and publication more than sanction**. With newly-informed markets instead making those calls. Given its ESG and financial capital adequacy systems, the EU could start/accelerate the process of factoring **biodiversity and carbon credits as essential core capital for all financial institutions**. Sufficient to counter climate change, restore habitat, and be part of a plan to address affordability issues, **SCCs** can underwrite and denominate **global trade**, buying time to moderate need for human migration, instead **establishing connection, and sharing opportunity**, across regional centres.

**The strategic opportunity for the EU is huge.** They need only early partners and supportive community. Countries with opportunity for reforestation or mariculture joining nations most affected by climate change (e.g. Bangladesh and small island nations). Success might lead to bringing key countries like Brazil on board. The registry will need carbon verification science including **geo-mapping, drones, LIDAR and AI** (best implemented soon in actual carbon field measurement). **'Technology Clusters'** can be established as part of member countries' mutual license negotiations with the EU (or other center). The intention is to share benefits and defer capital costs, yet also ensure the crucial verification function in the detailed identification, with regular update, of partner countries' permanent solid carbon monuments.

Outside the EU, Switzerland might be good at managing a multi-currency carbon register to secure world trade (underpinned by the ‘usually ahead of the game’ commodity trading town of Zug, apparently becoming current home of global carbon sequestration). For other reasons, Singapore could also work. Bermuda (as hosting the largest proportion of global captive and catastrophe reinsurance) may have a role given the logical (still to be fully recognised) connection between natural catastrophe reinsurance and global carbon sequestration. The other reinsurance centres are Omaha, London, Zurich, Munich and Singapore, increasingly Shanghai. Maybe Tokyo. All such threads to mesh carbon to retrocession and reinsurance.

London is the best trading location (common law, commodities trading and reinsurance all in place). Amsterdam is a capable, internationalised city of history (close to Brussels), with climate change resonance in the Netherlands’ lowland geography. Maybe it holds the book, with other European centres, including London assisting? (London needs a role, shame about Brexit). The unified registry will allow broad based liquidity to confirm the ‘rarity’ of SCCs.

There is much to resolve to settle **Solid Carbon Credits** as a global trading currency, but it must be on any agenda. A new **Currency of Trade** to measure new **Transparency**.

#### **(Branch 8): “Where to, after Kyoto, Nagoya and Paris”**

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## **5. Local Practice, Global Logic**

At **Pouakai in the Pelorus Sound**, Aotearoa New Zealand, for example, natural capital has been the basis for 26 years. Restoration was never charity but investment: native plantings to increase ecological stability, carbon storage, and to secure long-term asset value. We also soon look forward to welcoming visitors for their experiences on the land. Yet the project also highlights friction -- measurement standards are unclear, there is no allowance for ‘good work’, and central government particularly changes its positions too frequently, most often it seems because political agendas favour vested interests that do not favour the environment.

**In short, making money by actively enhancing biodiversity as core corporate function** has been and remains, **a difficult task**, for an astonishing number of reasons.

Beyond carbon credits and the ‘eco’ and experience tourism to follow, Pouakai will examine viability for cottage-manufacturing using native berries, leaves, bark and manuka honey etc. Success will belong to the people, whether living on, or visiting the land, or even enjoying its products from afar. Pouakai is hoped will be experienced by many, and in myriad ways.

#### **(Branch 9): Mauri ora Pouakai.**

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## **6. Obstacles and Lessons**

An issue that Pouakai shares with all rewilding land projects, is the time it takes. Pouakai’s carbon resource alone is 26 years in the making, with biodiversity recovery *still* yet to come.

Carbon credit markets must operate by **transparent governance, consistent metrics, independent verification, and market clarity**. So as to also benefit **financial liquidity**. But when not verifying actual credits, **Pouakai** (and maybe much of natural capitalism) must be

satisfied, **not with exact metrics** but with finding experiences and products sufficiently **deeply rooted in habitat recovery** for consumers to want to purchase them, at a volume and price where (the forest) can be further capitalised to ensure the continuity of its mission over long periods of time. **Anyway**, consumers clearly deserve protection from false claims about environmental effects. But **local governments** should shift from being reluctant referee into being **active facilitator** of proposals to protect and enhance the commons. And central governments must accept the need to **never stop educating** about natural and social capital.

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## 7. Market Failure

Market failure is real and usually temporary. Carbon credits have never had an opportunity to succeed, but failure usually occurs in financial markets when reality suddenly turns out not as long thought. As happens, a relevant example was personally experienced in the floating rate note market of December 1986, in respect of 'perpetual subordinated' bonds, which despite losses in hundreds of millions, only affected banks and brokers, so never became infamous.

It went to the nature of capital. In short, weeks/months into trading a new kind of bond, a 25%-35% capital insufficiency in an otherwise non-volatile market (habitually trading on margins of 0.05% or less), 'became discovered' over a calendar week. It turns out the bonds were overvalued when factoring bank capital adequacy rules still at consultation stage, something not immediately obvious to the 22 year old traders, nor even to their bosses, nor (more surprisingly) to the mainly bank clientele who bought the bonds. Dozens of sudden price dislocations resulted, in a market uniquely badly placed to absorb them. It was the first time hearing the phrase 'big figure backwardation' and seeing ashen-faced traders rushing to audio tapes to clarify trades. With surreal irony in attending a Eurobond market conference (skiing junket) in Switzerland the weekend between the trading days, a truer extent of the capital loss (a function of long term interest rates) coming home to the slopes and cocktails. A layer of capital removed on one side, achieved on the other. The same thus-exploded subordinated bonds still and forever sitting on balance sheets as perpetual reminders of the prime market rule, 'caveat emptor' (buyer beware). And with regulatory treatment usually reserved for the protection of retail clients and not professionals trading amongst themselves.

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## 8. Conclusion: The Philosophy Forward

Natural capitalism is a living framework. It translates old wisdom -- intergenerational care, kaitiakitaka, stewardship -- into the language of modern markets and governance. Its core principles are clear: **value grows where care is applied**. Recognise first, protect second and foster third, 'financialising' as needed to protect and foster the newly recognised capital.

**Biodiversity** is at the heart of natural capital, and **intersects with all forms of capital**. In a short timeline, species extinctions are expected to reach cascade levels. Species might be left only in the 'ancestral memory', such cultural capital fading with time as additional loss.

The old politics and economics have brought us to the brink. Both must be more survival-oriented, and rooted in reciprocity and common sense. The logic is clear, the benefits are universal, and the time to act is now. **Mauri ora natural and social capital - Viva SCCs!!**

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