Financialization, valuation and governance in the conservation and climate change panopticon

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Plan

Can capitalist valuation and calculation technologies serve the objectives of conservation and mitigating climate change?

Review of the macroeconomic patterns of climate and conservation finance

Has the financialization of climate and conservation finance worked?

https://youtu.be/uhnzYemDVPY

1. Climate finance

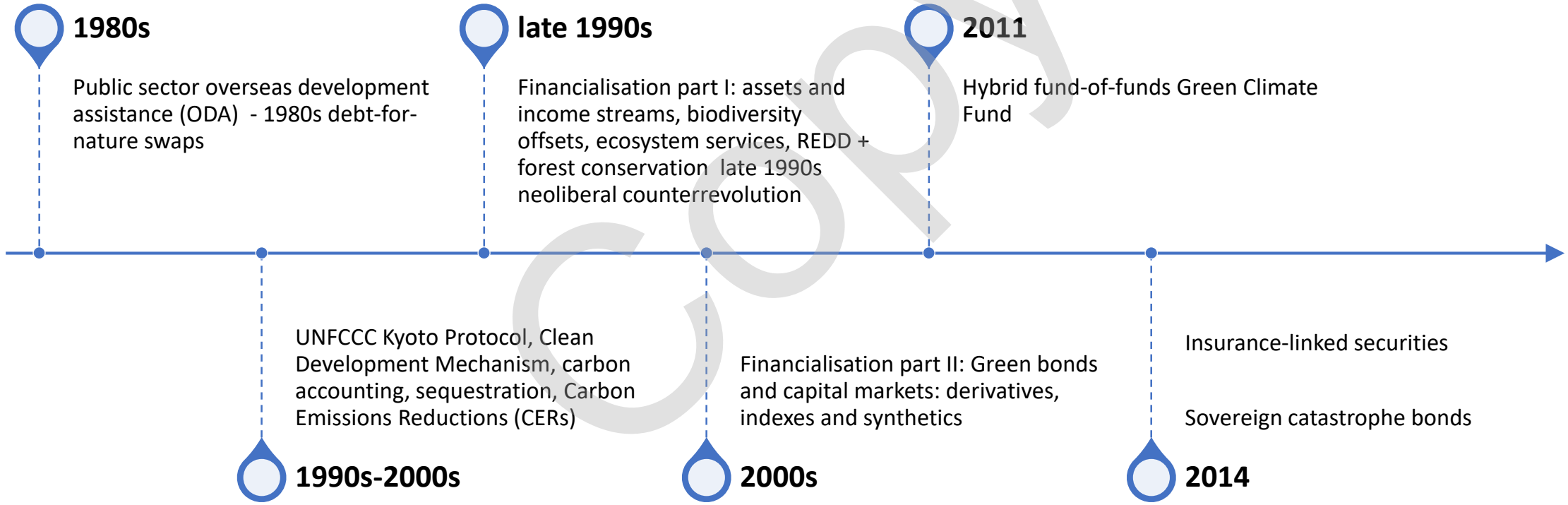
Is money generated in either the public or private sector which has a designated purpose of assisting society in mitigating or adapting to climate change

It grew within traditional development finance institutions in the public sector and was then renamed climate finance as a sub-category of development finance

And then money for climate finance was also generated in the private sector directly in ‘green’ finance or ‘green bonds’, species bonds, conservation bonds, biodiversity

Many climate change projects combine public and private money

1.1 Where does the money come from? Climate finance: rough chronology



2. Traditional public finance

An investigation into the poverty reduction co-benefits of climate change-related projects in eThekwini

Background

Although the impacts of climate change are experienced by all, the poor are the least adapted and are therefore more adversely impacted when climate change disasters occur. In addition, the realities of climate change are eroding the livelihood opportunities of vulnerable communities and pushing them further into poverty. Against this backdrop, the inclusion of poverty reduction co-benefits in climate change related projects has gained prominence in recent years.

Objectives

This research project aimed to evaluate climate change adaptation programmes and their poverty reducing co-benefits in the eThekwini Metropolitan Municipality of KwaZulu-Natal in order to both improve local and national practice, and to influence wider debate at national and global scale. The project also aimed to develop a measurement instrument which could evaluate climate finance initiatives and expenditures most likely to demonstrate poverty co-benefits.

Methodology

This study examined 13 purposively selected climate change-related projects in eThekwini Municipality to determine their poverty reduction potentials, building on the document analysis of the poverty reduction co-benefits of 134 climate change-related projects in the municipality. Using a qualitative research approach, municipal staff and project beneficiaries were interviewed to gain insights into the co-benefits of these projects.

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CONTACT

Conclusion

Findings of the study show that all 13 projects that were qualitatively assessed had poverty reduction co-benefits and are important sources of livelihood and income for project beneficiaries. Some of the projects have improved local communities' access to and appreciation of nature, others have provided accredited training for participants which they have leveraged to access employment beyond the climate change projects, while most have resulted in increased well-being.

In light of the benefits of the climate change projects, there is a need to move beyond a project-based approach to institutionalising climate change activities in order to provide permanent employment. Climate change projects also have great potential to contribute to national development and poverty reduction in its many dimensions if scaled to provincial and national levels.

planning, monitoring & evaluation

PSPPD
PROGRAMME TO SUPPORT PRO-POOR POLICY DEVELOPMENT

2.1 South Africa climate adaptation

South Africa is at the early stages of engagement with a global system of climate finance and eThekwini is a demonstrator and catalyst

But what types of financing options are there to scale up?

Methodology

Review of eThekwini funded climate related projects-2016

planning, monitoring & evaluation
Department:
Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

2030 NDP

PSPPD
PROGRAMME TO SUPPORT PRO-POOR POLICY DEVELOPMENT

KwaMashu, climate change adaptation focus group, May 2016

SIYABONGA! All our participants

Key Research Findings

- eThekwini finance project-based
- Reproduces traditional labour organization and inequality
- Public sector resources can't stretc to meet demand for employment o fair wages
- Small effort given scale of problem
- Projects in biodiversity protection and conservation even smaller

3. Clean Development Mechanism, South Africa: Approved project CO_2 abatement by activity %

Activity	% of total predicted CO_2 abated (tonnes)*
N20 abatement	22.42
Methane capture from landfill	16.16
Gas capture from closed ferrochrome furnaces	7.73
Biomass energy generation	3.45
Wind	33.15
Solar	6.14

Source: Total of all approved projects in the CDM database September 2014 (https://**cdm**.unfccc.int*)*. This table adds to 89.05% of total of 9,651,395 tonnes in 52 projects of highly variable size, and excludes some projects not assignable to these categories**.**

3.1 The record so far: carbon trading in South Africa

September 2014, oversight of NDA weak: 'status unknown/uncertain', on 38 of the 54 funded CDM projects in South Africa,

- including all the methane capture from landfill projects
- support withdrawn from two others from the UK FCO (Tugela Mill Fuel Switching Project) and the Government of Canada (Mariannhill and La Mercy Landfill Methane Capture).

Of 54 registered projects, 14 had extremely weak additionality cases

- eg Sasol gas pipeline to a new brick kiln saving carbon emissions that would have been generated if they were to pursue their 'original' intention of opening a coal mine.

'additionality' in 12 projects already legally mandated (National Air Quality Act of 2004)

- section 33 of this Act on the rehabilitation of mines mandates companies to ensure post-closure air quality. However, 7.7% of the total predicted reductions committed to capturing waste gases from closed furnaces..

designated national authority

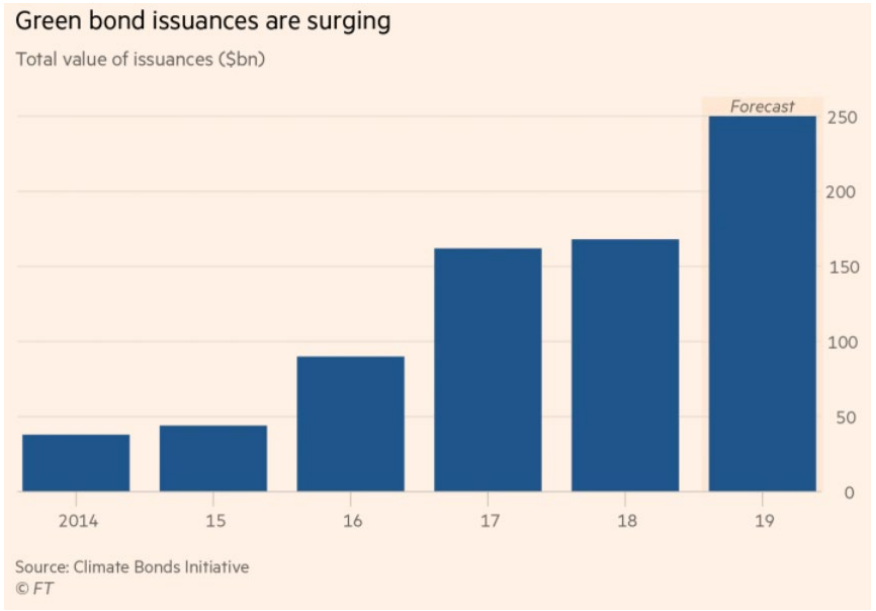
The Designated National Authority (DNA) manages South African CDM projects and valuable CERs, gratefully received by shareholders of Omnia, Sasol, PetroSA, South African Breweries, Mondi and the Beatrix Mine - for polluting a little bit less

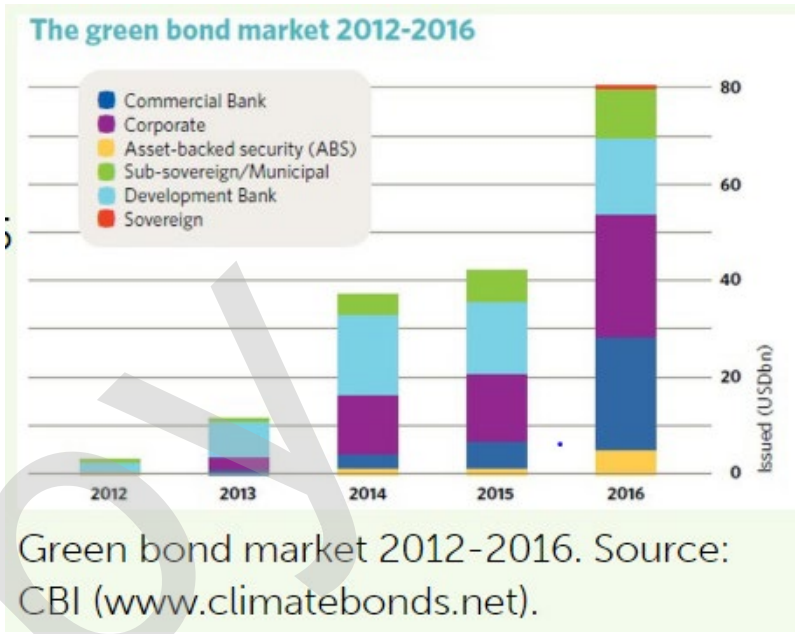
REPUBLIC OF SOUTH AFRICA

4. Financialisation

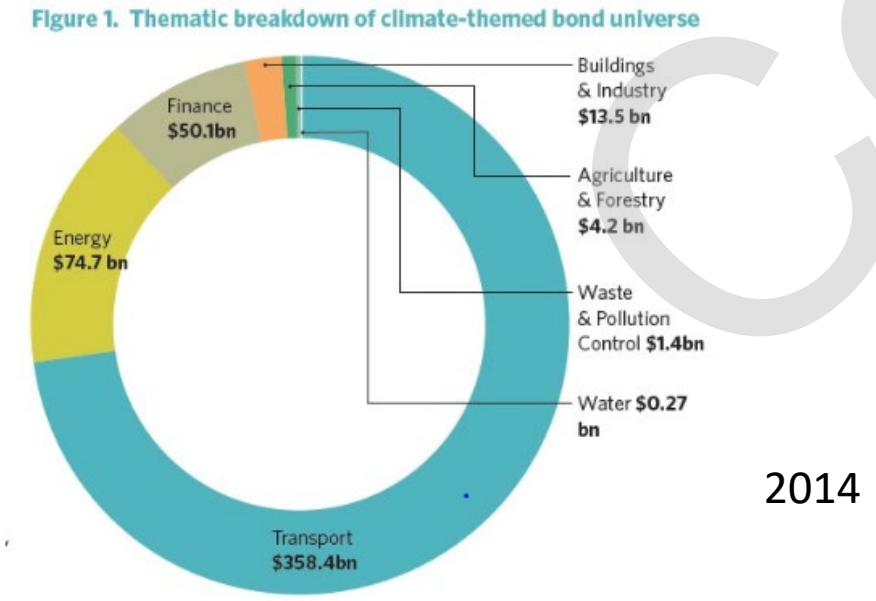
green bonds

- Environment theme bonds, a “new fixed income asset class”
- But less than 1% of holdings by global institutional fixed-income investors who manage $100 trillion of private capital in total
- of a total universe of green bonds worth $131 billion in 2008- 2016, only $2.2 billion has been directed to cities in ‘the South’, (and 94% of this has used DFIs as intermediaries) compared to $17 billion to cities in the North (where 84% is contracted directly by municipalities)
- Closely linked to financing of energy, transport and infrastructure

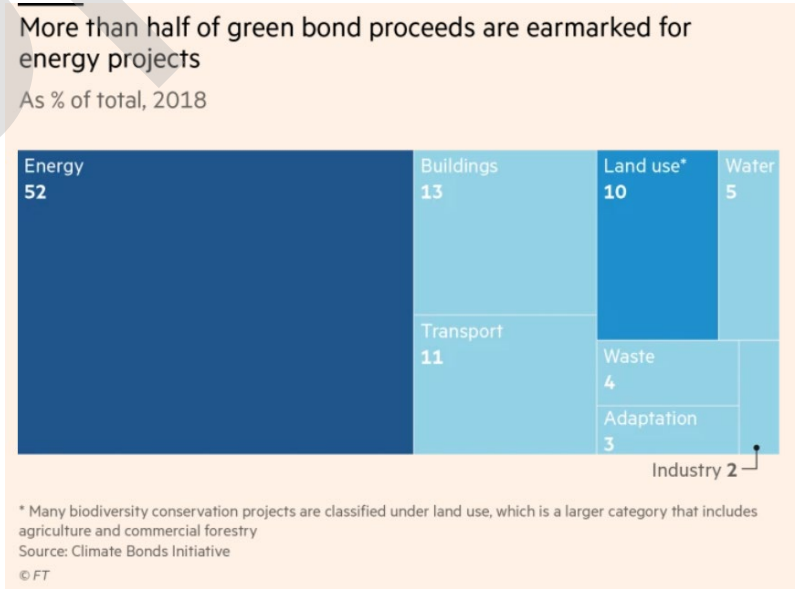




Green bond market 2012-2016. Source: CBI (www.climatebonds.net).



2014

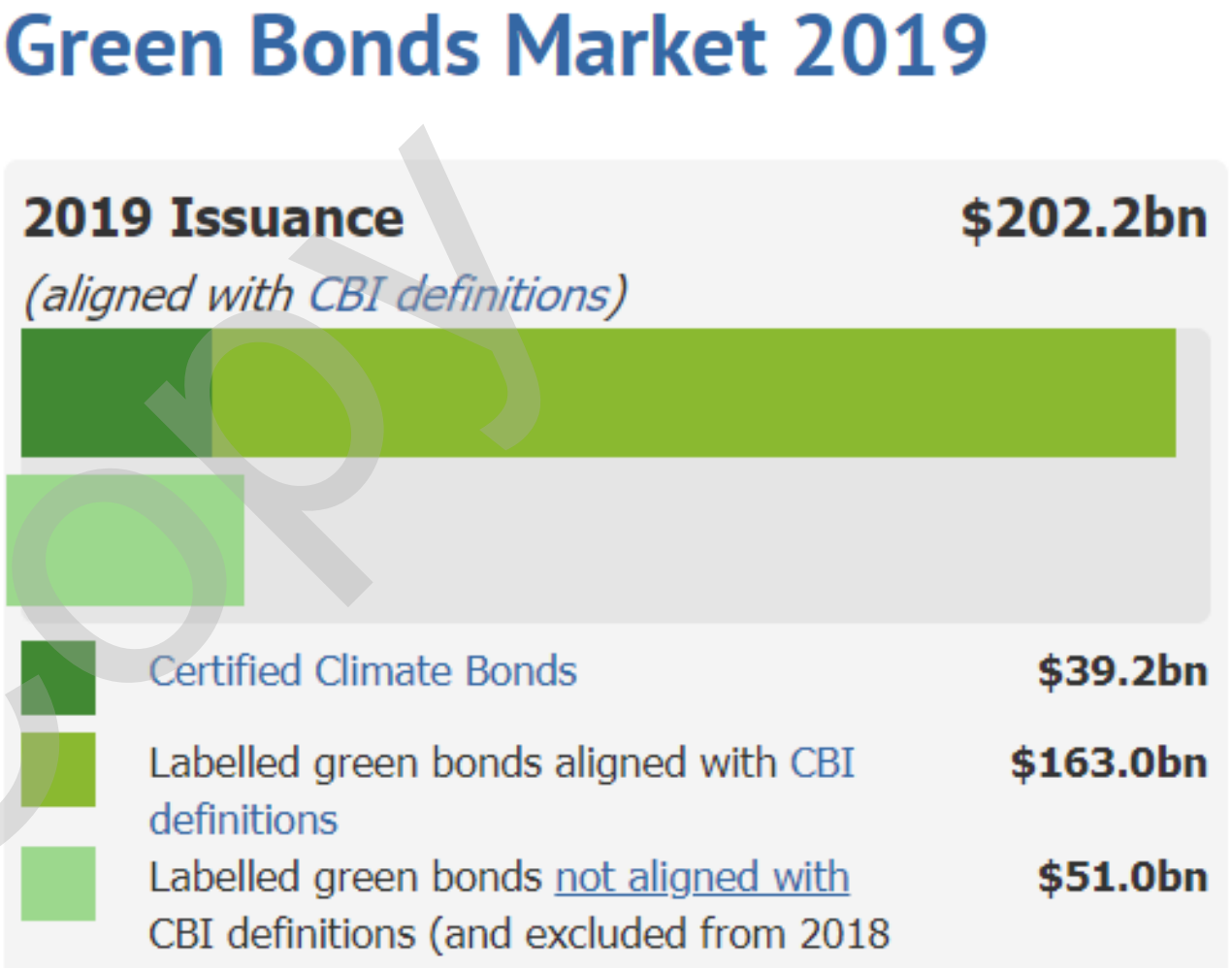


"'Green bond' market leaves wildlife behind"

Financial Times 2019

4.1 What is ‘green’ in Green Bonds?

- ‘green’ is currently determined by two main qualifications:
  - either the proceeds of the bond are (supposed to) be ring-fenced for environmentally beneficial projects – called ‘use of proceeds’ bonds;
  - and/or the issuers themselves badge them as ‘green’ with an accompanying narrative – called ‘self-labelled’ bonds .
- Sean Kidney, CEO of NGO the CBI as “It’s all quality ice cream, but investors can still pick the flavour they want”
- ‘pure-play’: all the money is invested in the thing that is ‘green’ rather than just a part of it (which is termed ‘non pure-play’)
- In the five Green Bond Indexes bond non-pure play threshholds not disclosed



4.2 Blended finance: Kasigau

- For example, a case study:
  - October 2016 the IFC sold a $152 million forestry bond for the Kasigau Corridor in Kenya, one of the largest REDD + projects globally
  - The bond allows investors to be paid in cash or carbon credits, or a combination of the two.
  - IFC is underwriting as a guaranteed purchaser of the carbon credits from Kasigau, and will distribute them to investors when due.
  - BHP Billiton provides a liquidity support mechanism

5. Green Climate Fund

- The Intergovernmental Panel on Climate Change (IPCC) wanted GCF to be: 'transparent', 'accountable', guided by 'efficiency', effectiveness', and all within a 'country-driven approach', 'scalable', 'flexible' and promote and strengthen engagement with stakeholders, while 'promoting environmental, social, economic and development co-benefits and taking a gender-sensitive approach" (FCCC/CP/2011/I.9, 2011: 4).

GCF to

- Promote a 'paradigm shift' to 'low emissions sustainable development pathways' using a new 'business model framework'
- Promote 'transformational change'
- Adopt 'international best practise' in safeguarding and risk management

- These signifiers and framings act to fix meaning as discursive and ideological contests solidify in technical documents

- Now Board Members argue over the meanings of these as they might be demonstrated in project proposals

5.1 Green Climate Fund: challenges

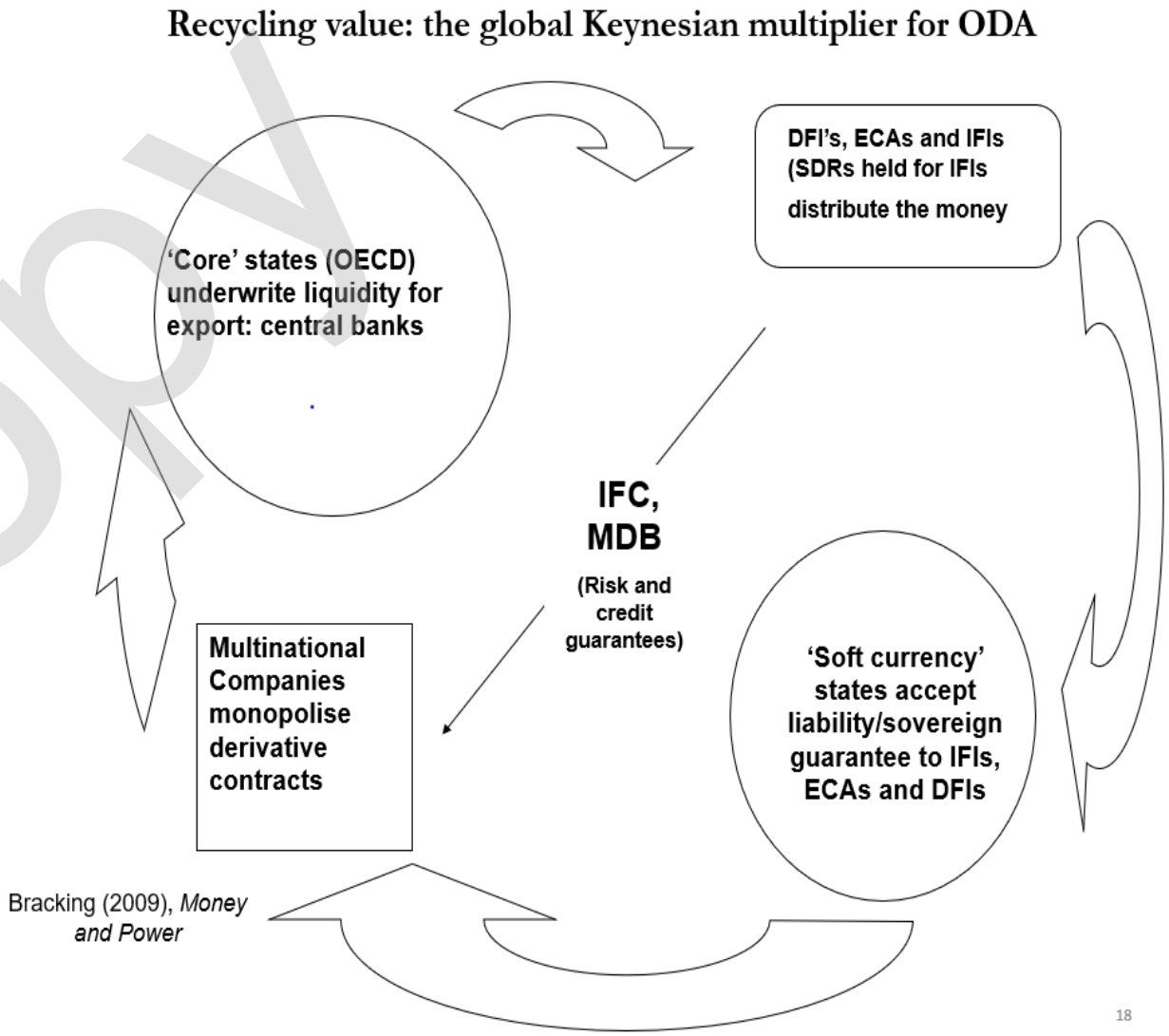
- ‘Developmental co-benefits’, ‘climate change adaptation’, climate change mitigation’ and ‘climate finance’ have no legally fixed definitions.
- Path dependence to ‘results priority areas’ chosen by banking consultants: a ‘black box’ contained within the Business Model Framework
- Relies on authority of ‘experts’ and consultants - not scientific scoping
- Contains an opportunity cost logic of poor being easier to change
- Is performative: creates a spectacle of care while spending virtually nothing (to date)
- But also a material ‘logic’ of agricultural displacement and land grabbing

- “in a marginal agricultural region, faced with increasingly erratic rainfall and increasing competition for irrigation water, actions to improve irrigation efficiency, switch to more drought-tolerant varieties, etc. are incremental, whereas a shift to non-irrigated cropping or crop-grazing mixes with greatly reduced water needs might be called paradigm changes. Similarly, encouraging the movement of people, skills and investment to a new region with more reliable rainfall would also constitute a transformative change.” (GCF, 2013: 11).

Business Model Framework of the Green Climate Fund

6. Climate change: patterns of climate finance

- association between climate change mitigation funds + private sector + spent in the North or offshore
- Climate change adaptation + public sector + spent in the South
- many indicative cases which show:
  - projects with full operating costs recovery
  - large proportions of funds spent on consultancy, planning and managemen using Northern based firms or DFIs;
  - excessive claims for knowledge product which underuse pre-existing knowledge and domestic capacity.



6.1 Financing climate change and conservation

- Up to April 2019 a Green Climate Fund which had generated $10.3 billion in pledges, but around $3 billion implemented
- OECD members' global expenditure on climate change of $9 billion in financial year 2013–2014
- Issuance in the green bond market grew from $11 billion in 2013, to $34.2 billion on 20 November 2014, to $202 billion 2019 (to date)
- "total universe of bonds linked to key climate changes solutions" stood at $502.6 billion, compared to $346 billion in 2013 (Climate Bond Initiative, 2014)
- Meanwhile the total stock of global money, $73 trillion in global capitalized stock, $90 trillion in broad money, $215 global debt, $1.2 quadtrillion derivatives mark
- et
- mineral fuels, including oil, coal, gas, and refined products still making up 14.8% of all global trade (Index Mundi, 2014).

IUCN funding

Table 2: Expenditure by Global Result							
			2017	2018	2019	2020	2017-20
Programme Area		**Global Result**	**Plan**	**Plan**	**Plan**	**Plan**	**Total**
			CHF m	**CHF m**	**CHF m**	**CHF m**	**CHF m**
Valuing and Conserving Nature	GR1	The risk facing species and ecosystems is reduced	50	52	54	56	212
Effective and Equitable Governance of Nature's Use	GR2	Natural resources governance at all levels enables delivery of effective conservation and equitable social outcomes by integrating good governance principles and rights-based approaches	20	21	22	23	86
Deploying nature based solutions to address societal challenges including climate change, food security and economic and social development	GR3	Societies recognise and enhance the ability of healthy and restored ecosystems to make effective contributions to meeting societal challenges of climate change, food security and economic and social development.	35	37	44	49	165
		Total	**105**	**110**	**120**	**128**	**463**

https://portals.iucn.org/library/sites/library/files/documents/WCC-6th-003.pdf CHF 575 mill 2017-20

CHF stands for Confoederatio Helvetica Franc.

Equiv. $575 mill

IUCN now implementing agent for GEF and GCF

7. Insurance: risk pooling in catastrophe bonds

"Africa needs solutions. The XCF [extreme climate facility] will offer African nations a new financing mechanism to manage climate risks by providing direct access to new private capital and by leveraging development partner contributions. We are leading the way in innovative climate finance"

Dr. Ngozi Okonjo-Iweala, Nigeria's Minister of Finance and Chair of Africa Risk Capacity (ARC)'s Governing Board, 23rd September 2014

"XCF will ensure that African countries and the international community appropriately monitor climate shocks and will be financially prepared to implement specific adaptation measures in an effective and accountable manner, leveraging ARC's existing public-private infrastructure. The XCF allows us to leverage private capital against the risk of increased frequency of severe climate events, while using public money to fund immediate and certain adaptation requirements"

Dr. Richard Wilcox, founding Director General of ARC

7.1 Insurance-based solutions

- Qu 1: How will it be decided when the bond triggers?
  - Setting the 'trigger' on a bond can be based on the specified losses of the issuers (as in traditional reinsurance), or proxies of losses, such as modelled loss using event parameters in a catastrophe model or index

The insurer decides – justified by 'science'

- Qu 2: Who will pay for weather insurance?

African taxpayers, with increased surveillance as a sub-text:

“The XCF will be designed to be objective and data-driven, using a baseline of 30-year climatology data for Africa. Consistent meteorological information covering the entire continent is available since the start of the satellite era in the early 1980s and will be used to calculate a multi-hazard extreme climate index for each region”

“climate cat bonds will use a trigger structure linked to a parametric index constructed from various types of climate and weather data, which will parametrize increases in the severity and impacts of weather events, so the bonds will trigger should the index reach above pre-defined levels”

7.2 Climate Change: an uninsurable, systemic risk?

- IMF paper: "..expected damages caused by unmitigated climate change will be high and the probability of catastrophic tail-risk events is nonnegligible."
- "There is growing agreement between economists and scientists that the tail risks are material and the risk of catastrophic and irreversible disaster is rising, implying potentially infinite costs of unmitigated climate change, including, in the extreme, human extinction"

  - Signe Krogstrup and William Oman (2019). Macroeconomic and Financial Policies for Climate Change Mitigation: A Review of the Literature. IMF Working Paper 19/185

7.3 Insurance cannot cover slow-onset crises that are predictable

- "The absolute unbankability of an insurance response to slow-onset events such as sea-level rise epitomizes the difficulty of stretching risk's spaces not just spatially, but also temporally: sea-level rise is a risk materializing in slow(er)-motion, the accumulation of hundreds of years of fossil fuel combustion and the inertia of the climate system. **And when the outcome is slow and certain rather than quick and random, no willing buyers can be found: risk becomes a certainty to be brutally borne by territories and populations who must engage in 'transformational adaptation' or cease to exist**"
  - (Christophers, B., Bigger, P., & Johnson, L. (2018). Stretching scales? Risk and sociality in climate finance. *Environment and Planning A: Economy and Space*. P. 14 https://doi.org/10.1177/0308518X18819004)
- Follows for species extinction – also unbankable?

Table 1. Overview of extant sovereign disaster insurance pools.

Pool	Risk transfer model	Pool members	Perils	Coverage limit	Total payouts through mid-2018	Notable payouts relative to size of programme
Caribbean Catastrophe Risk Insurance Facility (CCRIF)	Catastrophe risk to international reinsurance market and capital markets	*2018:* Anguilla; Antigua & Barbuda; Bahamas; Barbados; Belize; Bermuda; British Virgin Islands; Cayman Islands; Dominica; Grenada; Haiti; Jamaica; Monserrat; St. Kitts & Nevis; St. Lucia; St. Vincent & Grenadines; Turks & Caicos; Trinidad & Tobago; Nicaragua	Tropical cyclone; earthquake; excess rainfall	2016–2017: US$724m	US$130.5m	2017 Hurricane Irma (US $30.8m): Anguilla, Antigua & Barbuda, Bahamas, St. Kitts & Nevis, Turks & Caicos 2017 Hurricane Maria (US $23.6m): Barbados, Dominica, St. Lucia, St. Vincent & Grenadines, Turks & Caicos 2016 Tropical Cyclone Matthew (US$29m): Haiti, St. Lucia, Barbados 2010 earthquake (US$7.7m): Haiti 2010 Tropical Cyclone Tomas (US$13.7m): St. Vincent, Barbados, St. Lucia
African Risk Capacity Agency (ARC) Specialized agency of the African Union	Catastrophe risk pooled to mutual sovereign insurance company ARC Ltd, some passed to international reinsurance market	*2017-2018:* Burkina Faso; The Gambia; Mali; Mauritania; Senegal	Drought *Cyclone and flood planned*	2015–2016: US$179m	US$36m	2016 drought (US$8.1m): Malawi[a] 2014–2015 Sahel drought (US $26m): Senegal, Mauritania, Niger
Pacific Catastrophe Risk Insurance Company (PCRIC, formerly PCRAFI	Currently: captive insurance facility owned by member countries passes risk to international reinsurance market Initially: catastrophe swap contracts to international reinsurance market	*2017–2018:* Cook Islands; Marshall Islands; Samoa; Tonga; Vanuatu	Tropical cyclone; earthquake/ tsunami	2017–2018: US$45m	US$6.7m	2018 Tropical Cyclone Gita (US$3.5m): Tonga 2015 Tropical Cyclone Pam (US$1.9m): Vanuatu 2014 Tropical Cyclone Ian (US$1.3m): Tonga

[a]Malawi's original contract did not trigger and ARC's payout was made only after protracted audit; see in-text discussion

Data compiled from: ARC, 2016b, 2016c; Alaskary, 2016; Artemis, 2017; CCRIF, 2017; ePact,2017a, 2017b; PCRIC, 2018; World Bank, 2015, 2016a, 2016b.

7.4 Insurance for Resilience?

- So products for Municipalities and governments are commercial, even with development finance ‘subsidy’
- Is also a model of micro-insurance for individual herders and farmers in a pooled insurance fund
- But again, providers own data and manage pay-out triggers

Also downside:

- May have problems of control and audit fraud associated with the micro-finance model (cf. Capitec South Africa, Grameen, Utah Pradesh)
- Greater indebtedness of individuals
- Technological lock-ins in conditionalities

An alternative model?

- Would need mutual model of horizontal ownership using the public sector (and non-proprietary weather data)
- Combines asset insurance with preventive behaviours, adaptation, resilience (urban)
- Combining herd and crop insurance with weather data and disaster services (rural)
- Risk pool would need stretching to represent mutualism/solidarity

InsuResilience

The InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions builds upon the G7 Climate Risk Insurance Initiative, which was launched at the Elmau summit in 2015.
The overall objective of the G7 Climate Risk Insurance initiative is to stimulate the creation of effective climate risk insurance solutions and markets and the smart use of insurance-related schemes for people and assets at risk in poor and vulnerable developing countries. It aims to increase the number of poor and vulnerable people in developing countries benefiting from direct or indirect insurance by up to 400 million by 2020.

https://www.insuresilience.org/

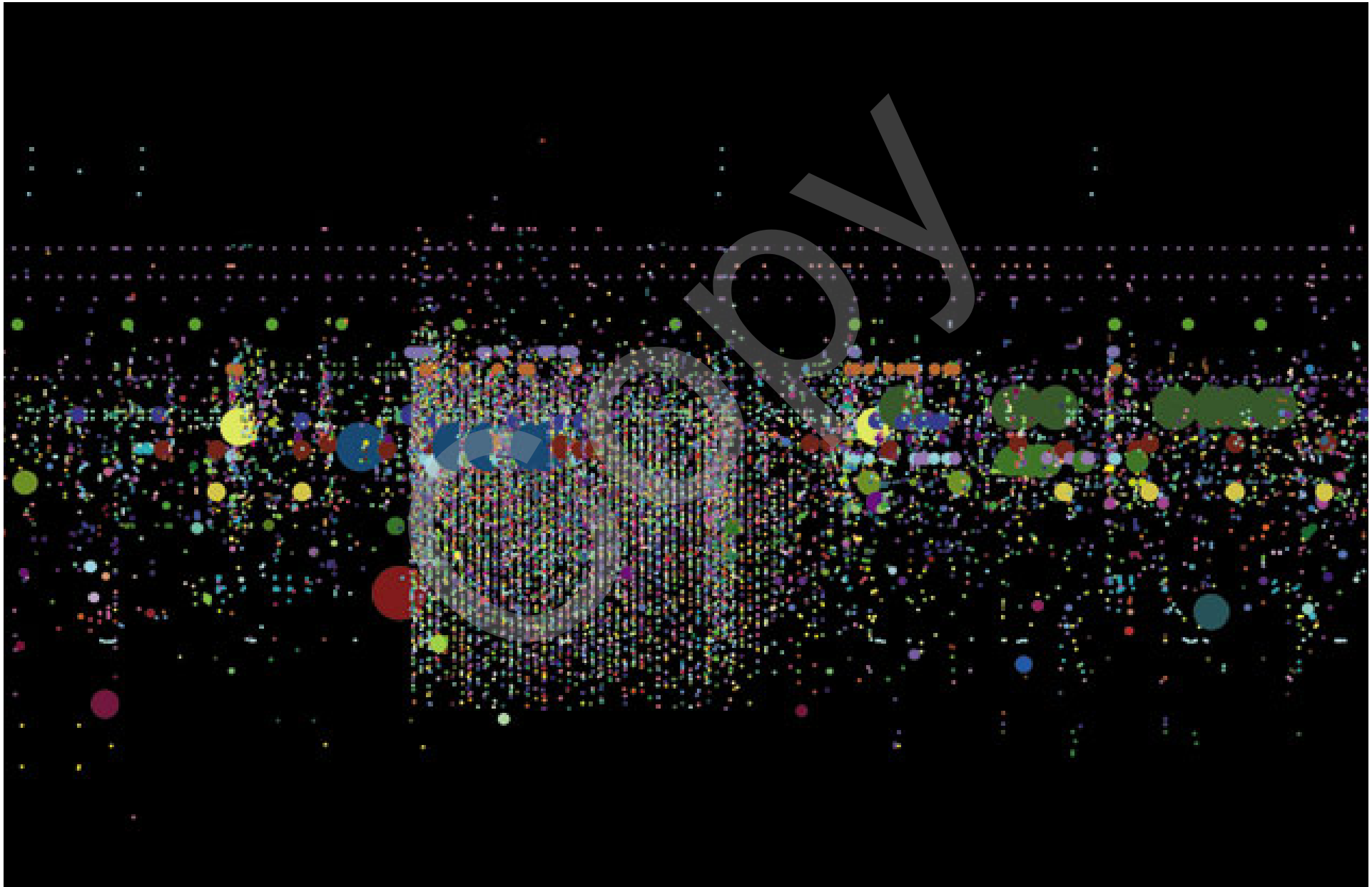
8. Financialisation makes risk insurance ‘sensible’

Uses proprietary weather feeds in derivatives and agricultural futures markets

The contracted derivative income stream of an asset under financialisation is captured as a rent.

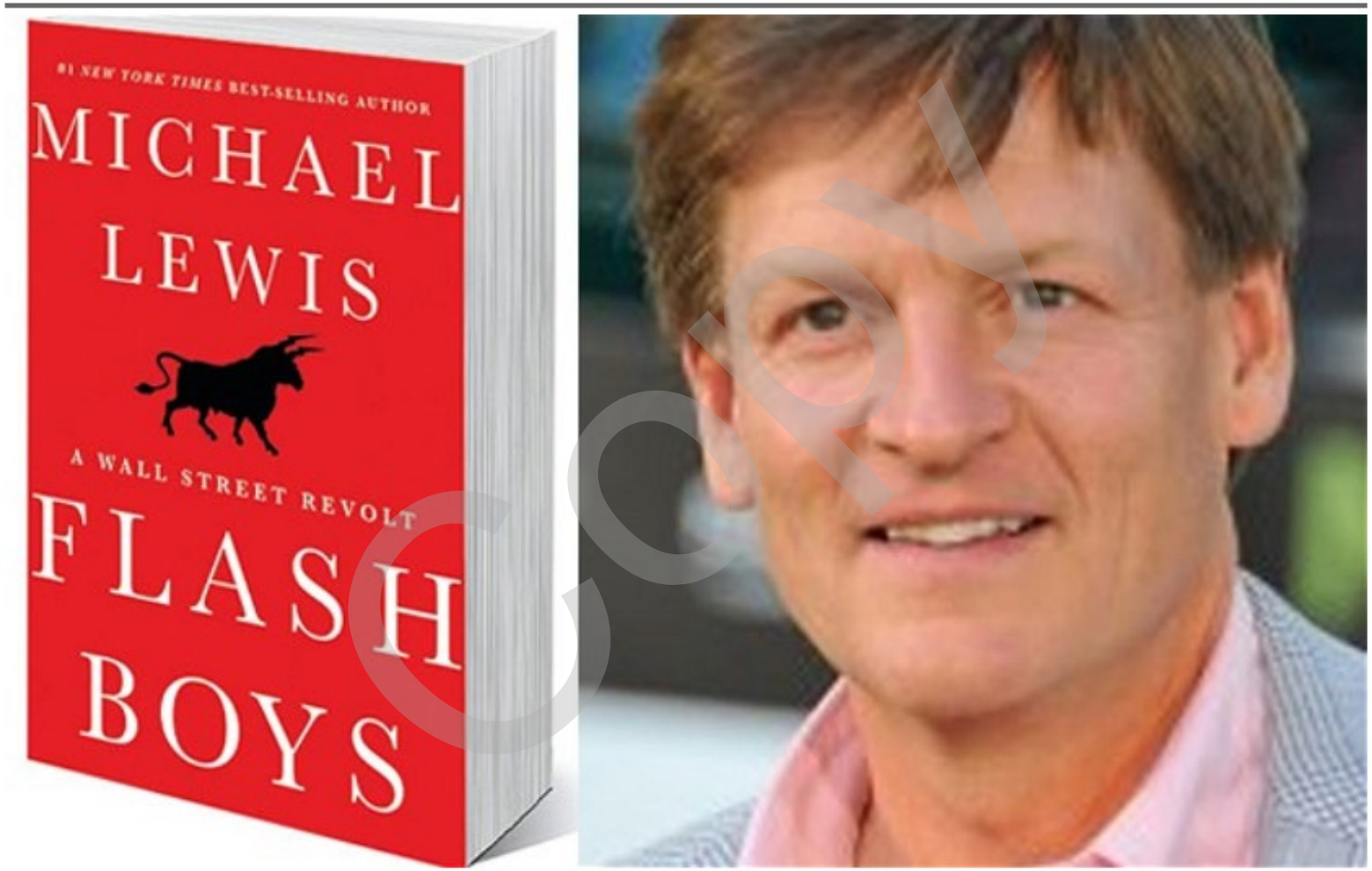
Holders of money have perverse reasons to take rents at the expense of everyone else.

Velocity of circulation under algorithmic trading : 6th May 2010



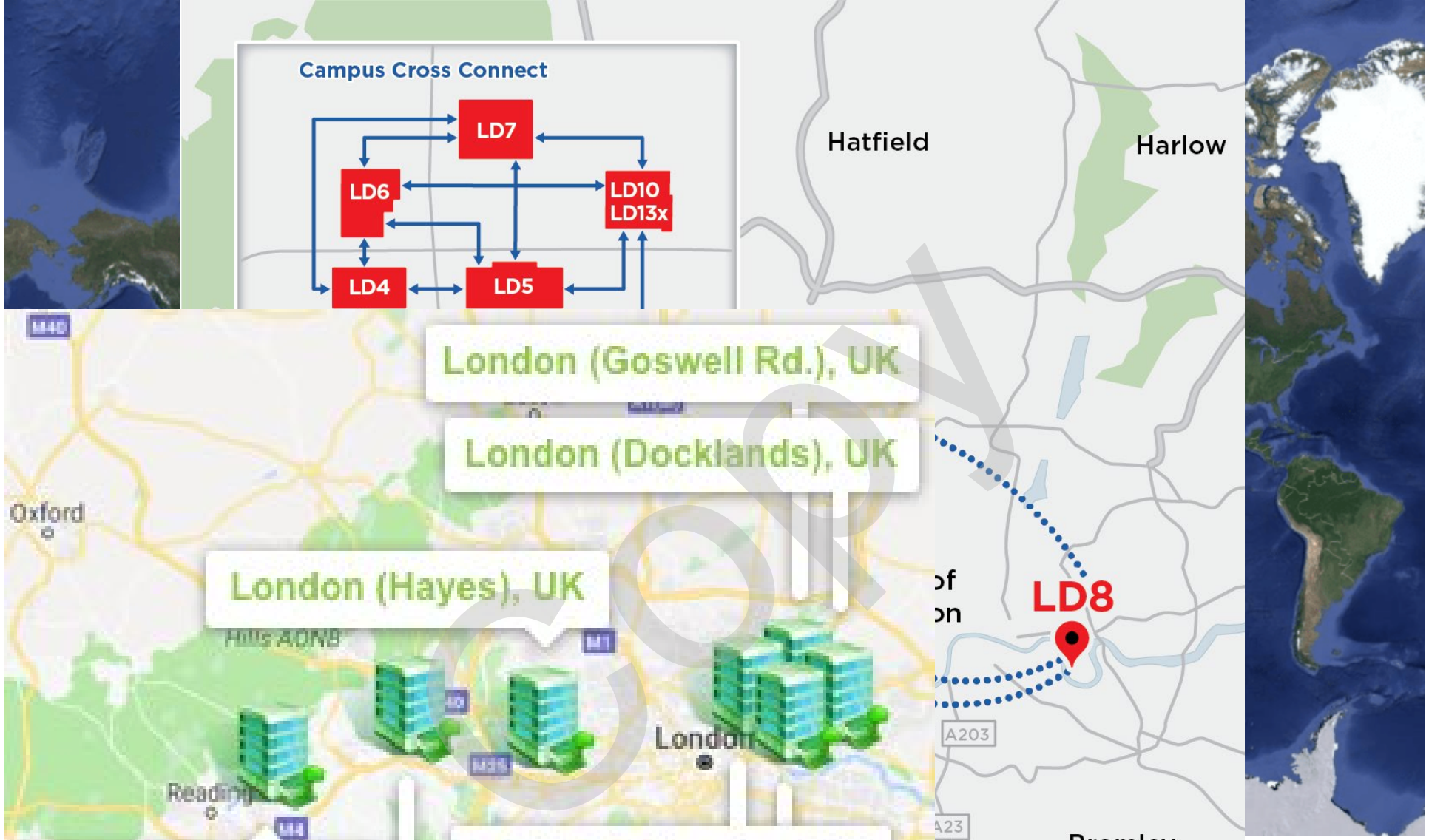
High-frequency trading: when milliseconds mean millions

In his new book Flash Boys, author Michael Lewis looks at the extraordinary lengths high-frequency traders go to to beat the competition



Michael Lewis, in his book Flash Boys, says high-frequency traders are willing to go to extraordinary lengths to gain this speed advantage - including laying the shortest, and therefore straightest, possible fibre-optic cable between the Chicago exchange the New York exchange based in New Jersey, a distance of 827 miles.

Allegheny Mountains, Virginia, a cable for 1.3 milliseconds


Campus Cross Connect
LD7
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Hatfield
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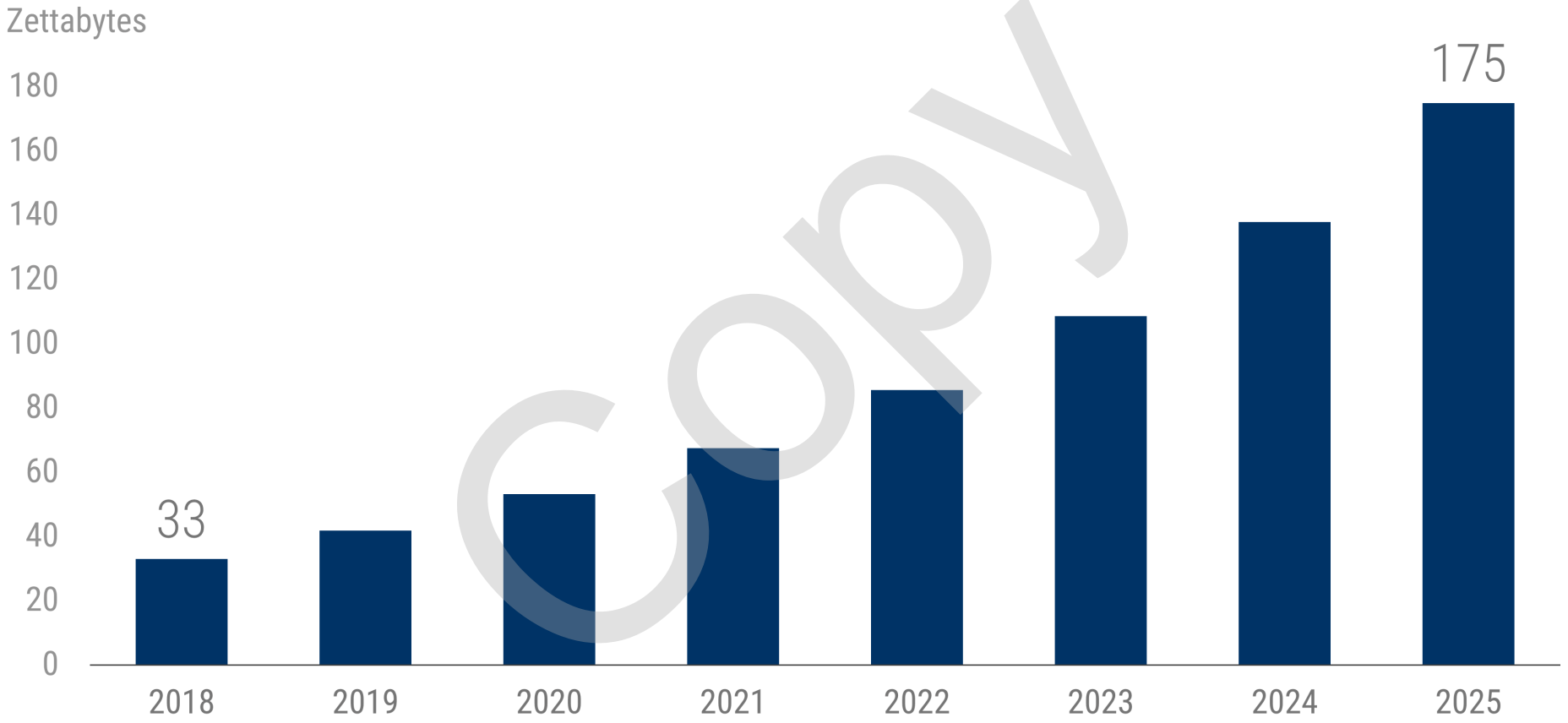
London (Docklands), UK
Oxford
London (Hayes), UK
LD8
Hills AONB
M1
M40
M25
London
A203
A23
Reading
M4
Bromley
LO6: Reading, UK
LO3, LO4: London, UK
LO1, LO5: Slough, UK
London (Brahm St.), UK
M3
Cross Connect
Map data ©2018 Google

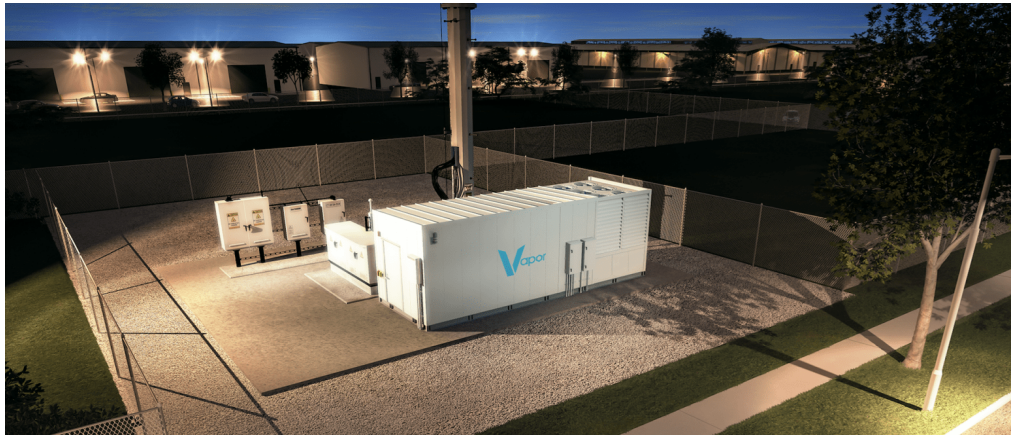
More data creates the need for more data storage

Total data produced is expected to grow more than 4 times to 175 zettabytes by 2025



Source: : IDC's Data Age 2025 study, sponsored by Seagate, November 2018

Future combines edge technologies the size of shipping containers or less, with mega data campuses like this one in Inner Mongolia



8.1 An economy of assets under management

- Private sector Asset Management companies most interested in supply chains, infrastructure and energy and how climate change risks and creates returns from these for investors in pension funds and pooled funds
- Insurance-Linked Security (ILS) have conditionalities attached and the underlying city/infrastructure *users* become the asset from which an income stream can be taken
- No people or animals considered!

Assets	*Capitalist valuation*	*Outside the frame/governance*
people	workers	Necropolitics
Non-human species	Food, hunting	Selective extinction
ecology	resources	dispossession

8.2 From carbon measurement to risk accounting

- insurance based products are over-taking long public debates about fixing the carbon, ecosystem and climate economization processes down to a final standard commodity, or suite of them.

- Instead, the newer total system of risk, made in new concepts of resilience, adaptation, weather and risk insurance financialises nature at abstract scale in order to provide a commensurate super structure to ecocybernetics and the new biopolitics of human management (Braun, 2015).

9. Conclusion

The commensurabilities between different calculative forms that link the nodes of the dispositif of climate finance are still ‘becoming necessary’ in a contest between carbon, ‘green’ or insurance-based accounting.

The insurance regime of climate management installs risk as a form of governmentality that shifts costs away from capital

This calculative technology is best adapted to financialisation

But overlaying an insurance regime will not solve the accounting problems in the financialisation of climate easily

[Or their real problems exacerbated by climate change… or climate change]

Efforts to insert environmental data into the calculative devices and pricing mechanisms of climate finance are the new frontier of eco-cybernetics

Going forward

- Climate finance too small in relation to the required needs of climate change mitigation and adaptation in terms of the environment and human-built environments for a sustainable future.
- Climate change mitigation, adaptation and resilience appear as defensive practices, reactive and palliative, a technology of governance?

- Solutions?
- Needs a massive 'capital switch' in favour of a climate mitigating, climate adapting, new socioeconomic reconfiguration which rewrites humans' relationship with ecology
- Need a new commitment to mainstream change across government (national and global) to create policy that tackles climate change production

- People, animals and Nature need new valuation systems