FOREST CARBON FINANCE SUMMIT 2010:
GETTING TO SCALE, GETTING RESULTS

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By

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Background

January 31st, 2010 was the deadline for countries to complete their proposed emission reduction targets set at Copenhagen. There were no changes made. Parallel to this - at the request of the UN - countries were asked to notify their adherence in writing to the Copenhagen Accord. Up to now 87 out of 192 nations have done so. This is less than half the number of countries that "noted" the Accord by the end of COP 15. Thus, where are we now in relation to our commitments, to deal with the drivers of climate change?

The EU has set 20% emissions reductions as a target (base year: 1990). This may be increased to up to 30%, contingent upon other nations' commitments.

USA: 17% reductions taking 2005 as the base year. If the base year is the same as the EU (1990) then the effective reduction is 4%. China targets 40% to 45% reductions by 2020 using 2005 as baseline.

These percentages however are relative to units of GNP. These commitments, should they be translated into facts, may still be short of what it is required to guarantee a cap of 2 degrees centigrade increase in global temperature.

As Nations fail to reach a global agreement, and scientific bodies lose fragile credibility through media magnified blunders, people show growing skepticism regarding global warming.[1]

COP 15: The success of a failure

Much has been said and written in the media about the failure to reach a legally binding agreement at COP 15. Most of these have been superfluous, over-analyzed events maximizing trivia and trivializing facts. If we are to have a COP 16, qualitatively different than its predecessor COP15, then there is the need to redefine the focus of these, and related gatherings under the light of rationally applied lessons learned.

[1] According to a recent BBC poll conducted in the UK, 25% did not think global warming was happening, an increase of 10% since a similar poll was conducted in November. The percentage of respondents who said climate change was a reality had fallen from 83% in November to 75% this month. And only 26% of those asked believed climate change was happening and "now established as largely man-made" compared to 41% in November 2009.

Central to this task is the need to separate "hopes" from expectations. Copenhagen was focused on hopes. When the meeting failed to deliver desirable outcomes some of those hopes were crushed. Feelings of pessimism about the functionality of the political system followed. Subjective appeals prevailed over expectations based on objective readings of institutional capabilities and mandates.

There is the need to formulate and disseminate objectively founded expectations if we are to attract the support of civil society and the endorsement of the private sector in confronting climate change. The required policy framework yet to be developed cannot be contingent upon an appeal for the "political will" of leaders of the world. COP 15 did not fail to deliver a legally binding agreement because of the absence of "political will". It failed because of its expression. Elected officials to political offices must act within the boundaries of the mandates emanated by their respective constituencies. They must respond to the interest of the people and institutions they represent and act in accordance to the values that justify those interests respecting the institutions created to protect them. Leaders of industrialized, market-oriented countries and their counterparts in emerging economies cannot run contrary to an economic system which relies on short term returns and enshrines consumerism as an expression of basic liberties and freedoms.

These are some of the valuable lessons from Copenhagen that must be learned and applied. While it may have failed to deliver on the hopes of many, it has the merit of guiding us into building constructive, objective expectations. To achieve this goal, capacities must be developed among individuals and institutions both in the developed, as well as in the developing world. There are many areas, dimensions and levels within these countries where capacities are to be built. In this paper we will concentrate on capacities needed to construct carbon emission mitigation strategies. This is preceded by a short reference to capacities required to articulate alternative policy frameworks as a basic condition to effectively addressing climate change challenges.

Building Adaptive Capacities

Current policies regarding climate change mitigation and adaptation strategies have been proposed for the most part within the context of existing political and economic frameworks. Climate change is perceived and defined as "the problem" to be confronted by techniques, strategies and policies constructed within such context. An alternative approach is needed. One where the analysis focuses on the ***inadequacies of current political and economic policies in the context of climate change rather than on climate change as "the problem" in the context of efficient/effective political and economic frameworks***.

This necessary shift in focus will have to be built as a process in which adaptive capacities are developed. Once established, these (adaptive capacities) will gradually make the needs of a market-oriented economy compatible with the principles of a

nature-oriented economy. It will also reconcile individual freedoms under the larger umbrella of the common good.

Policies based on the understanding of climate change as the problem fail to recognize the significantly different pace of change ~~of~~ in economic and political cycles in relation to environmental cycles. Market economies work by definition on relatively short cycles. In many cases the need to maximize profits demands short term returns. Political cycles are equally short. Democratic principles require periodic changes in leadership, and governance styles. Environmental cycles last much longer. The relative lack of continuity of political and economic managerial structures, conflict with long-term actions required to deal effectively with environmental issues, themselves the result of century-old processes.

Adaptive capacities are therefore strategies aimed at reconciling the different pace of change in politics, economics and, ecosystems. These (capacities) could be operationally manifested in policies directed at different levels (global, national, sub-national) as well as ~~at~~ with finance mechanisms such as carbon trading in terms of the science, governance and marketing in carbon trading.

Adaptive Capacities: Global / National / Local Level

One of the documented shortcomings of COP 15 was the failure to produce a Global, legally binding agreement. Contrary to the hopes of many however, this (failure) should have been the rational outcome to be expected. Global level actions in the context of current political and economic systems cannot be strategic points of departure from which lower level initiatives (i.e. at the national or sub-national levels) can follow. Instead global level scenarios should be the result of cumulative initiatives at lower levels. Thus national level initiatives connected with one another through time and space eventually reach~~es~~ a global level policy.

The strategy is to build scenarios at the national-regional levels where adaptive capacities facilitated in various geographies eventually produce a systemic (global) level. The aim is to facilitate the development of multiple, interconnected initiatives with global impact. Rather than aiming at a global mandate in the hope that it will have a local impact.

Local level Adaptive Capacities: REDD+

REDD is increasingly recognized as a "*part of any serious policy to address the climate crisis while at the same time respecting other forest values. Without REDD, keeping global surface temperature increase below 2 C will likely be impossible*" [2]

The conservation debate after Copenhagen has added yet another distorting dichotomy to this discourse: climate change vs. biodiversity. It is argued that by pursuing the former, the latter will be compromised or even neglected. This seemingly endless search for the "ideal" framework which when prescribed will solve most

[2] WWF Greenprint Issue Brief-January 2009

conservation problems, resembles the still ongoing search for the "perfect" system where problems of social development such as poverty are minimized or eradicated. This mode of reasoning has also polarized "private" against "public" domains; "development" vs. "conservation" and more recently "mitigation" vs. "adaptation". REDD+ offers a real possibility to overcome this ideological discourse by providing sound theoretical and methodological grounds needed to reconcile artificially polarized concepts. Thus REDD+ remains as a one of the few instruments to address climate change which appeals to both developed and developing countries. It is in fact a limited space where mitigation and adaptation can productively meet"[3] It is also a space where public and private funds can co-operate for their respective and mutual benefits. And, where climate change - a cyclical process - can be dealt with in the context of a larger biodiversity framework.

REDD+ in and by itself is neither the answer to climate change nor the solution to biodiversity conservation. It is an innovative, yet imperfect and quite complex finance mechanism whose merit is it's potential to functionally articulate biodiversity integrity and livelihood improvement goals into a holistic framework. In order for REDD and especially REDD+ to deliver on its emissions reductions, biodiversity and livelihood goals several adaptive capacities must be in place.[4] Three areas are of particular relevance for capacities to be built:

- **Capacity** to develop, improve on, apply and disseminate **scientific** procedures to accurately measure the biomass of the forest, variations through time/space; the amount of carbon locked up in forest as well as time/space variations; deforestation rates.
- **Capacity** to produce and disseminate effective **market-based** approaches: transparent, equitable and just. Prices must reflect the superiority of avoided deforestation over other land uses while preventing deceptive practices which unrealistically lower costs to make REDD more appealing. Carbon credits should be used as natural currency in carbon trading with equivalents in monetary currencies.
- **Capacity** to create, maintain and/or restore conditions of good Governance able to guarantee reductions which are real, measurable, reportable and verifiable. And at the same time assure sustainability by promoting effective ownership, efficient management and equitable financial returns to local stakeholders. Special consideration should be given to the rights of Indigenous Peoples and local communities.

How to build REDD+ required Capacities

A consensus is emerging out of the debate between markets vs. non-market funds to finance forest protection. Instead of seeing these as mutually exclusive options they

[3] J. Tresierra "First Progress Report" REDD development in Peru. December 2009.

[4] We prefer to use the more inclusive term "adaptive capacity" instead of "capacity building". The latter connotes a process while the former indicates an established condition or situation.

are increasingly perceived as complementary strategies. Thus, non-market funds are to be applied in facilitating entrance to the carbon market through RED, REDD and REDD+. Given the qualitative distance between carbon markets and forest dwellers, a building/enhancing/adjusting capacity at the local level is a basic pre-requisite to any eventual deal.

It should be noted that capacities required to enter into the carbon market are not restricted to countries seeking "adaptation" funds. Building capacities will also be required of countries negotiating "mitigation" quotas and carbon credits. Nevertheless given time constraints we will in this opportunity deal with adaptive capacities required by REDD+ countries.

A first step in this process is to recognize that forest-rich countries seeking to develop REDD+ are highly **heterogeneous** socially, economically, culturally and, politically. Thus "multi-***stakeholder's capacity assessment"*** programs must be undertaken according to specific stakeholders' configurations (context specific). Principal stakeholders are Central Governments, Local/Regional Governments, forest dwellers/users including concessionaries, indigenous peoples and peasant communities. Criteria to establish stakeholder's assessments include:

- Actual and/or potential roles different stakeholders play in eventual REDD+ projects.
- **Level of coordination between multiple sectors/actors/roles**. Many capacity building efforts have failed because they concentrate on a single sector (peasant communities, regional governments, academic institutions, etc). There seems to be an unwarranted assumption that by creating/increasing capacities in one sector of the population the overall program will automatically benefit. Thus isolated efforts are directed at improving existing legislation, or to creating new policy frameworks, or to improving communities negotiating skills or forest conservation practices, or to improving on the science required to establish baselines. While all these capacities are crucial in and of themselves, their true value can only be materialized in the context of coordinated actions whereby improved or created capacities in one sector can also impact other sectors.
- **Cultural guidelines**. Natural resources have different values to different groups. Indigenous Peoples regard nature in a more comprehensive, holistic manner than market oriented groups or government development planners.
- Different stakeholder's **absorption capacity** to incorporate technical and financial resources such as satellite information about deforestation, modeling to estimate carbon emissions or negotiating carbon prices.
- Capacity building then is constructed on the basis of two key axis: **stakeholders capacity map** which captures group specificities, strengths and weaknesses to enter into the carbon market and **role complementarity** which articulate groups strengths and weaknesses into a coherent, mutually reinforcing, effective and efficient whole.
- The objective is to produce adaptive capacities in a holistic manner so that improved capacities in one sector impacts favorably capacity development or enhances performance in another sector. It makes little sense –for example- to

improve legislative commitments regarding land tenure issues in forest communities if there are no local actors to enact/enforce such commitments.

- Significant funding will be required to **increase/establish coordinating capacities** between governmental agencies, civil society organizations and local communities (concessionaries, indigenous and peasant communities).
- Once a stakeholder's capacity national or regional map is constructed and role complementarities are assessed then a "sector specific" capacity building program can be planned and executed.
- **Sector specific adaptive capacities** for REDD+ include: Science; Governance and, Market.
- **<u>Science</u>: Adequate learning must be promoted at the community level.** Insufficient technical capacity and resources (i.e. for establishing national reference scenarios with which to assess REDD emissions reductions; for monitoring and assessment of changes in forest carbon, and for developing and implementing REDD strategies and field activities) is a barrier to REDD in many countries. [5] While it is commonly accepted that ***capacity for effective participation is to a large extent based on understanding of science*** the actual implementation of this principle leaves ample room for improvement. Given the complexity of required scientific methods relative to formal educational levels of forest dwellers and authorities of local governments it is necessary to develop a communication strategy that takes into account formal education backgrounds and cultural orientations of local communities. So called "capacity strengthening" activities are for the most part limited to "workshops" guided by experts who visit local communities for short periods of time (3 to 5 days) and large intervals (3 to 4 times a year). These activities are seldom "culturally adequate" to the learning capacities (mode of learning, language, etc.) of local communities. Unilateral, mechanical communications about scientific procedures remain the domain of the experts and are seldom internalized and appropriated by local communities.

<u>Science</u>: Capacity building is a long-term process of appropriation of technical resources by local communities capable of transforming (scientific) information into knowledge. If the aim is to "to set up systems to assess carbon emissions and removals on forest land, using methodologies recognized by IPCC (IPCC Good Practice Guidance) so that future results could be demonstrable, transparent, verifiable, and estimated consistently over time"[6] then it is **mandatory to facilitate local learning mechanisms** rather than "stand alone training or technology transfer by experts imparting knowledge to others" or a "process where an external organization to the process can determine the final outcome"[7] . It is highly insufficient to "transfer" scientific information. What is required is to develop culturally adequate communication mechanism managed by local communities. These "knowledge managers" will act as a bridge between

[5] UN-REDD. FAO, UNDP, UNEP. *Framework Document*. June 20 2008 p.4

[6] UN-REDD op-cit p.10

[7] RECOFT <www,recoft.org/site/index pp 1,2.

hardcore science and local learning techniques building capacities in the true sense: from the bottom up.

Governance: "*in many areas where deforestation and degradation are at their highest, **governance is weak** and is an underlying cause of deforestation and forest degradation"……. it is naïve to believe that it is easy to change and improve forest governance – there are many deep and vested interests in maintaining the status quo. Strengthening forest governance will require strong and fair rules, rights, and institutions at all administrative levels – national to local – as well as civil society participation"*[8]

The London-based Overseas Development Institute has warned that '*capacity strengthening' of long-neglected forestry institutions in order to undertake REDD programmes could take 'decades'.* ODI states that the challenge of **overcoming bad forest governance in the tropics has been understated**, as "*recent attempts by the international community to support sustainable forest management do not give much cause for optimism'.*[9]

As shown in the aforementioned quotations "Governance" has been for the most part defined in terms of adequate regulatory frameworks. Clear legislation, proper institutional legislative enforcement and transparency in the management of resources are some of the most commonly cited attributes of "good" governance. A second common trend is to highlight the importance of Governance by its absence. Improper legislation, weak enforcing capacities, corruption, normative ambiguity appear regularly as the direct and/or indirect causes of natural resource depletion or degradation. REDD is a process the very nature of which demands good governance. It is however advisable to understand governance as something more than a collection of laws and appropriate institutions to enforce them and guarantee transparency. To these necessary dimensions we add "harmonization capacity" as a key component to plan and promote REDD+. In this context we understand governance as ***the objective, efficient and, transparent management of public assets for the common good***.

Applying this definition in operational terms ~~it~~ shows that of the three required adaptive capacities for REDD+ (science, governance, finance/market) this – governance- is the least developed. Science and Finance are ~~fields~~ relatively well established and significantly advanced fields in industrialized countries (principal carbon emitters). Adequate communication strategies may allow a fruitful sharing of this information with developing countries as both ***"science" and "market" are global categories*** accessible in principle by any country. **Governance however is mostly a local process** that needs to be adapted to access and effectively use global assets such as scientific methodologies and market techniques. In the context

[8] Bond et al. 2009. Incentives to sustain forest ecosystem services: A review and lessons for REDD. Natural Resouce Issues No. 16. International Institute for Environment and Development, London, UK, with CIFOR, Bogor, Indonesia, and World Resources Institute, Washington D.C., USA.

[9] Neil Bird. ODI November 2008 Commenting on the Eliasch Report commissioned by G. Brown

of REDD a successful (mutually beneficial) relationship between "mitigation" and "adaptation" processes must be base on good governance principles, policies and practices at both ends.

REDD schemes are basically finance mechanisms. As such they cannot guarantee a capacity to link carbon sensitive policies with livelihood and environmental policies (for income, employment generation, for asset/rights/biodiversity preservation and for social/cultural cohesion). In this sense REDD frameworks must motivate, induce and guide the introduction of changes to legal frameworks that regulate incentives, rights, financing options and practices. In other terms, there is the need to stimulate a process to construct REDD induced Governance frameworks as a complement to existing Governance mandates applied to REDD.

What does this process entail? **Not in any particular order:**

- A functional legislative framework that clearly establishes ownership of resources: property/usufruct rights of land, forests, and derived services such as carbon emission reduction.
- A legislative framework that incorporates the multicultural nature of participating stakeholders.
- A proactive communication strategy that promotes awareness, knowledge of and access to legal institutions by local communities.
- A stable local government institutional set up suited for enforcing national legislation on land rights and natural resource management.
- Public-private alliances that in addition to financing different REDD+ components will also establish mechanisms to guarantee efficient and equitable distribution of benefits derived from carbon trading.
- In most countries where REDD+ is feasible the level of readiness is still low. Consequently a "nested" approach linking sub-national and national levels is most likely the preferred strategy to implement REDD+. Under these circumstances:
    - A dynamic and agile communication strategy is required to facilitate learning and cooperation among various decision-making levels (national, regional, local) and dimensions (public, private) and,
    - A joint decision-making institutional space must be constructed allowing for multi-stakeholder's views to be shared and incorporated into group action/mandates.
    - Built in Monitoring protocols should be established from the outset of REDD+ initiatives. Instruments should be built to measure impacts on livelihood, biodiversity, carbon emissions as well as the application of equity and contingency principles.

Governance is a dynamic construct. When applied in relation to REDD+ should be seen as treated as an ongoing process of continuous adjustments relative to the nature and interest of the multiple stakeholders involved. Some of the issues are currently being addressed, but others will require new approaches and new alliances as market-based approaches evolve.

Adaptive capacities in the transition (scale-up) to market-based approaches: Bring the market to REDD or REDD to the market?

There are important lessons to be learnt from previous and/or ongoing emission reducing public and private capital investments. The Clean Development Mechanism and the Joint Implementation and International Emissions Trading offer vast experiences to be used in the discussion concerning emerging REDD markets.

Today, the forest carbon market is less than $100 million, only 0.16 percent of the $64 billion worldwide market for carbon-denominated assets. Scaling up these forest carbon markets is one of the greatest challenges facing new climate policies. [10] What does this challenge imply? Particularly in view of the rationale explicit in Kyoto as well as by European and other emission limitation systems? Have technical issues such as "leakage" and "impermanence" been sufficiently addressed so as to satisfy market (private) funding?

There is sufficient room to scale up the current level of investments in the forest carbon market. It also seems there are adequate answers to the technical questions raised. Regarding the impact of REDD on climate change there seems to be a growing consensus on the causal association between deforestation-greenhouse gas emissions and climate change. In this regard:

> *"In the next 24 hours, deforestation will release as much CO2 into the atmosphere as 8 million people flying from London to New York.* ***Stopping the loggers is the fastest and cheapest solution to climate change. So why are global leaders turning a blind eye to this crisis?****" … "The accelerating destruction of the rainforests that form a precious cooling band around the Earth's equator, is now being recognized as one of the main causes of climate change.* ***Carbon emissions from deforestation far outstrip damage caused by planes and automobiles and factories*** *…deforestation accounts for up to 25 per cent of global emissions of heat-trapping gases, while transport and industry account for 14 per cent each; and aviation makes up only 3 per cent of the total"]*[11]

The question therefore is not so much in terms of the measurable impact of deforestation on climate change. The financial case is made for avoided deforestation as a viable, financially effective tool to confront climate change. When we take this equation to the market however, the relationship is not that clear. For example, are we trading equivalents? Is the market value of a ton of reduced CO 2 emissions from avoided deforestation equivalent to the market value of a ton of CO2 emitted by

[10] Nigel Purvis and Erin C. Myers. Scaling-up global markets for forest carbon. June 2008 | Issue Brief Resources for the Future 1616 P St. NW | Washington, DC 20036

[11] Daniel Howden, Deforestation: "The hidden cause of global warming" The Independent (2007/05/14)

industry? Does it cost the same to keep a section the Amazonian forest standing than to cut down automobile production in Detroit? What criteria are established to measure "equivalent values"? Many will dismiss this question arguing the capacity of the market to establish values and transform these into prices. Has the market already valued biodiversity and/or livelihood? If the trend is more toward REDD+ then, these questions must be posed.

Let us assume that the aforementioned questions are answered adequately and look for potential areas to intervene/invest in tropical forests. Three countries contain the largest forest cover in the planet and are also the ones with the highest rates of deforestation: Brazil, Indonesia[12] and the Congo Basin. However, are these countries REDD ready? The first two countries account for over 50% of global deforestation making them most suitable for REDD. In the Congo basin the main cause for deforestation is small-scale permanent agriculture, poverty, among the main deforestation drivers. REDD to be effective will have to be REDD+. Would private investors agree to trade on carbon credits and in addition deal with biodiversity conservation and livelihood improvement? Most likely baselines will have to be established. In Indonesia there are serious concerns about human rights issues as well as about governance problems.

"The Committee for the Elimination of Racial Discrimination (UNCERD)has received information according to which Indonesia continues to lack any effective legal means to recognize, secure and protect indigenous peoples' rights to their lands, territories and resources. For instance, it seems that Indonesia's 2008 'Regulation on Implementation Procedures for Reducing Emissions from Deforestation and Forest Degradation' appears to deny any proprietary rights to indigenous peoples in forests," wrote Fatimata-Binta Victoire Dah, Chairperson of the Committee

"In the absence of safeguards, the carbon finance market will simply inject more money into an already corrupt system, short-cutting needed reforms and exacerbating the situation," the report said. Among the biggest fears is manipulation by foreign carbon brokers who wave cash in the faces of provincial and district government leaders. Called "carbon cowboys," they can sign deals that give Indonesian districts only a fraction of what they should be getting.[13]

Walhi, which is arguably the country's leading environmental group, has lobbied against REDD, saying the current scheme needs to be amended to require prior consent from indigenous populations before any deals are struck. The group is also calling for a ban on market-based trading of carbon credits — meaning no public selling on stock exchanges — and an international agreement on reducing developed

[12] Indonesia is already the 3rd largest emitter of greenhouse gas after China and US.

[13] Fitrian Ardiansyah, program director for climate and energy at World Wildlife Fund Indonesia, said carbon brokers have already signed deals or made approaches in East Kalimantan, Papua and Aceh. "They say, 'Sign this. For 100,000 hectares for REDD, you will get $2 per hectare,'" Fitrian said. "But you're not supposed to count the hectares, you count the carbon."

nations' demand for raw materials such as timber. "REDD is CO2 colonialism," Surya said. "We still need a long debate before we decide anything." [14]
Brazil has opted for a non-market mechanism to reduce deforestation. The Amazon Fund receives support from the Government and donations from industrialized (ODA) countries. Their position is clear: no carbon credits to meet emission reductions.

Getting to scale-Getting Results?
Where do these scenarios leave as?

1. Expect more of the same at COP 16 as leaders of the world will most likely express their political will not to have a global legally binding agreement on climate change. Search for viability of alternative arrangements.
2. Review time-tables as level of investments at forest carbon markets will have to be contingent upon acceptable level of readiness in developing countries and effective credit allocation monitoring and verification in developed industrialized countries.
3. Establish private-public funding alliances at the national and international levels to finance **enabling conditions** for RED; REDD and REDD+.
4. Facilitate conditions to **enhance capacity** to promote **readiness in developing countries** over extended periods of time. Develop strategy relative to local conditions in the Congo basin; the Amazon and Indonesia. Different capacities for different peoples, different ecosystems, different governance systems.
5. On **Governance**: participatory planning, joint decision-making, community centered training; multi-stakeholder articulation, rights base approach. Clearly established property/usufruct rights.
6. On **Technical expertise at developing countries** (leakage and impermanence) baselines (nested approach) at first stages, verification and transparency, internal/external monitoring.
7. Verification and monitoring of reduced emissions quotas and targets in industrialized countries. Carbon Credit Certification Boards and code of ethics. Set up credit multi-stakeholder certification clearing houses.
8. Construct a forest carbon currency that integrates market and non-market values.

There is room for scaling-up the carbon market to include forest carbon. For this process to be completed much adaptation is needed across the ample spectrum of conservation and the market. Adaptation is required in the process of making science accessible to forest dwellers through a process of systematic appropriation of knowledge instead of a sporadic transference of information from the "experts"to the uninitiated. Adaptation is also needed in Governance systems. Good Governance must not be limited to point at corrupt practices and legal vacuums in developing economies. In addition to these basic components Governance must be understood

[14] Joe Cochrane "Can REDD Keep Indonesia's Forests Green?". Jakarta Globe. December 04, 2009

and practiced primarily as a system of effective and efficient iteration within and between participant market partners. Finally Adaptation is critically needed in modes of reasoning leading to an alternative understanding whereby climate change is no longer perceived and defined as "the problem" to be confronted by techniques, strategies and policies constructed within such context. An alternative way of thinking is to be constructed. One where the analysis focuses on the ***inadequacies of current political and economic policies in the context of climate change rather than on climate change as "the problem" in the context of efficient/effective political and economic frameworks***.

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