

Creative Learning and Policy Ideas: The Global Rise of Green Growth

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Supplementary Information

1. Research Design and Case Selection

Explaining ideational change in International Organizations (IOs) has three distinct elements.

- i. Idea generation: which ideas changed and where did those ideas come from?
- ii. Implementation: when, how, and why were the new ideas institutionalized? Why are some ideas selected and retained by a given IO?
- iii. Variation across IOs: why did some IOs adopt the new ideas while others did not? Alternatively, why did some IOs adopt the new ideas earlier than others?

We originally aimed to explain variation in the uptake of green growth ideas within a comparative case study design of six IOs. However, we soon realized that we had underestimated the importance of the linked processes of idea generation and implementation. New ideas were generated as IOs took up green growth. As a result, the paper now focuses on idea generation and implementation.

We began with an inductive, empirical goal: to investigate how IOs had represented the relationship between the environment and economic growth over time. A number of studies had posited the rise of green growth and we wanted to systematically study the timing, extent, and nature of this shift. We hoped to trace the emergence of green growth ideas across IOs. We were interested in whether or not the rise of green growth ideas constituted a paradigm shift or was just another name for an older set of ideas.

We designed a descriptive method to test whether or not there was: a) a rise in green growth concepts (“green growth”; “green economy”; “low-carbon development”); and b) an accompanying shift in the substantive policy ideas (understood following Hall (1993) as policy instruments/means, problems, and goals). If we found new concepts without substance, then we could conclude the change was just rhetorical. If we found both, we could conclude that there was a substantive shift in policy ideas. The full methodology for this step of the analysis is outlined in section 2 below and is the basis for Meckling and Allan (2020).

We also had a number of theoretical goals and expectations. We thought that the discourse analysis would produce variation in the timing of and extent to which IOs took up green growth ideas. This would allow for a controlled comparison across the IOs (Skocpol and Somers 1980). We could use this to evaluate rationalist and constructivist explanations. We also planned to use

process-tracing to establish the mechanisms of ideational change in each IO. We were particularly interested in evaluating the role of expert and professional knowledge.

However, in the course of process-tracing we found that expert knowledge was not driving the emergence of green growth. Policymakers were creatively responding to changes in the policy agenda and state practice themselves, and only turning to expert ideas after the fact. Moreover, we found that the histories of green growth in IOs were not independent cases. As Abbott puts it, the “career” of green growth unfolded across all of the IOs (Abbott 1988. Cf. Büthe 2002). This pointed to a more dynamic process that could not be encapsulated within a controlled case-study design. We theorized this dynamic process as creative learning and developed the observable implications of our theory. We aimed to create a set of analytical categories that would neither identify creativity everywhere nor subsume and hide instances of innovation. We used this to guide an analysis of texts on green growth from 2005-2017 (outside our original sample). The research design thus evolved over the course of the project.

Case Selection

Our original goal was to study the relationship between economic growth and environmental protection in IOs. We wanted to investigate a range of IOs that would allow us to understand how IO policy advice on the environment had changed since 1990. From the universe of IOs, we selected five international organizations and one state forum that play important roles in global environmental policy: the OECD, UNEP, UNDP, UNFCCC, the World Bank, and the G7. We chose these based on three criteria:

- i. they regularly and continuously address sustainability policy issues;
- ii. they continuously exist for the period 1990-2017;
- iii. their policy advice has global reach and reflects the views of the largest states, especially the core American and European states of the Western alliance.

These criteria led to a number of exclusions. The G20 has global reach and probably became a more important forum than the G7 sometime in the 2000s. However, it was only created in 1999 so we would not have any data for the years 1990-1999. The Asian Development Bank and Inter-American Development Bank justify inclusion on the basis of their large lending portfolios in 2017, but we chose the Bank because of its global reach across the period 1990-2017.

We think that these organizations represent the most important IOs and state forums in the field of global environmental policy. We explicitly excluded IOs that were created to advance specific agendas at the intersection of the environment and growth, such as the Global Green Growth Institute and the International Renewable Energy Agency. In addition, these organizations were only created in the late 2000s, not allowing us to trace their discursive output over the entire time period of our study.

This sample has a number of limitations. Since it excludes new IOs and is biased towards large IOs, it is likely to be slightly conservative in its representation of change. Nor does it encompass state and nonstate actors working on climate policy at various levels. The particularities of the method also meant that the UN environmental summits are absent from our sample. While these summits were important sources of policy and their declarations should properly be considered as “flagship” documents, their omission is consistent with our aims. Our focus is on policy ideas and we are specifically interested in policy advice given to states.

These organizations vary in interesting ways. The sample includes state forums that would reflect state ideas and interests directly (G7; UNFCCC), large IOs with big project portfolios (the

World Bank, UNDP), and smaller, more agile IOs (OECD; UNEP). It includes some IOs with large numbers of in-house researchers (OECD, World Bank) and others that do not. We expected these and other variations to be useful, but they did not end up being explanatory.

We dropped the G7 from the process-tracing study because access to high-ranking diplomats necessary to complete the research was too difficult to obtain consistently across states and over time. Moreover, the differences between the G7 and the IOs would have made any process findings idiosyncratic. Meanwhile, our inductive work identified that the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) was the source of the “green growth” idea. We then conducted additional interviews with key figures there and looked at the core documents from the period of interest.

2. Establishing the Explanandum: Coding IO Reports

What is the explanandum? We are interested in explaining how and why IOs create new concepts and implement them. There are multiple possible levels of implementation ranging from the occasional or strategic use of an idea to deeply institutionalizing or mainstreaming it. In this paper, we seek to explain how and why an IO *adopted* a concept. Adoption is between occasional use and mainstreaming. An adopted policy concept is one which circulates in the IO and informs the work of important units, but may or may not be mainstreamed, such that it becomes the central frame or purpose orienting policy. In strict terms, we say that an IO has *adopted* a concept or set of policy ideas when it is used in a flagship document (an annual report or signature policy document).

The remainder of this section draws on Meckling and Allan (2020) and pertains to the data presented in Figures 2, 3, and 4. Figure 2 demonstrates the persistence of “sustainable development” as a key concept and the rise of green growth concepts (these counts include the terms “green growth”; “green economy”; and “low-carbon growth” or “low-carbon development”) Figure 3 presents the rise of Keynesian and Schumpeterian ideas (the description of this coding is below). Figure 4 presents the rise of climate change as a central focus of flagship reports as opposed to environmental problems generally (including water, biodiversity, desertification, etc.).

Text Selection

For each IO, we selected one “flagship” publication for each year from 1990-2017 (i.e., one document per IO per year). In most cases, this meant summarizing and coding the “annual report.” When the annual report was not available, we substituted another annual publication that covered a wide range of the organization’s activities. This choice was intended to capture both the “official” rhetoric of the organization as well its practical activities, since IO annual reports typically contain a mix of the two.

Nonetheless, there are limitations to studying the Annual Reports. They rarely include rich, detailed discussions of the underlying economics. To get at that, it would be better to study technical working papers. However, there is no clear way to build a systematic, unbiased sample of the working papers or policy briefs that actually mattered in IOs’ policy work. You could take a random sample of the universe of working or policy papers, but in the World Bank or the OECD, e.g., there are simply too many policy papers to guarantee that a small random sample would contain relevant ideas. Annual Reports provide the most representative sample of policy ideas that have some degree of political buy-in. Moreover, Annual Reports do not always contain detailed discussions of environmental or climate policy, so we do not always have a clear representation of

an IO's views in the data. Despite these limitations, the Annual Reports data provide an acceptable proxy for the study of change in the policy ideas that IOs promote and deploy over time. We expect that various trends and ideas, if important to climate policy generally, will end up in the Annual Reports of big IOs.

A few notes on text selection:

- G7/G8: We selected the main declaration or the communiqué for the leaders' summit each year.¹
- OECD: We coded the annual report for all years, except 1999. There was no annual report available for this year, so we coded the *Development Cooperation Report*.
- UNDP: We coded the annual report for all years except 2000 and 2010. No annual reports were available for these years. In these cases, we coded the *Human Development Report*.
- UNEP: We coded the annual report for all years, except the period 1994-97. For these years, annual reports were not available. For the years 1994 and 1997, we coded the report of UNEP's Governing Council (the council did not meet every year in the 1990s). For 1995 and 1996, we coded the "Annual Evaluation Report" for these years.
- UNFCCC: We coded the report for the COP for every year after 1995. For the year 1990, we coded the UN General Assembly resolution authorizing the UNFCCC. For 1992, we coded the Convention itself.
- World Bank: We coded the annual report for every year.

Coding

We employed a form of manual content analysis to code the texts. The first step in the analysis was the collection of relevant quotes from the documents. Much of the material in the documents is not relevant to a study of economic-environment nexus in sustainability policy. We instructed Research Assistants to carefully read the reports and prepare summaries that consisted of direct relevant quotations from the text. This was labor-intensive work as many of the reports were hundreds of pages. The quote summaries outlined the central *goals, problems, and policy instruments* that appeared in the documents. The three categories here map onto Hall's (1993) seminal conceptualization of a policy paradigm. This allowed us to, in effect, test for the presence of policy paradigms, understood as integrated combinations of problems, means, and ends dominated by a tradition of thought.

The authors coded the summary reports using an inductively created coding scheme (Table 2). The list of coding categories was not decided in advance. Instead, the authors started by going through the summary reports to identify the key concepts, themes, and arguments that structured thinking about the environment-economy nexus. That is, we did not decide in advance of the analysis which themes to look for. Instead, we used the raw quote summaries to identify key goals, problems, and policies. We identified a list of 42 relevant categories. The list of categories included goals, such as "green growth" or "sustainable development." It also included problem statements such as "environmental degradation is the result of a market failure." Finally, it included policy proposals and instruments, such as "investments in clean technology." We then used this list as a deductive coding scheme that we used to go back and code all the summary reports using the same schema. To ensure consistent and valid coding, the two authors did all the coding. We first both

¹ In the early 1990s, the leaders usually produced an "Economic" and a "Political" declaration. For these, we selected the "Economic Declaration," as this is where environmental issues were discussed. Once a single "Communiqué" was adopted, we coded that.

coded a sample of 6 texts across the time period (1 from each of six five-year periods in the data) separately. We then compared our codes, reaching agreement on differences and refining the rules. After coding, we then went back and checked over each other’s codes to ensure we agreed with the coding decisions throughout the sample.²

We used this raw data to assess the degree to which changing ideas about the economy-environment nexus were shaped by various traditions of economic thought. We classified the inductively obtained list of 46 categories according to whether or not they reflected any of the schools of thought as laid out in Table 1. For example, we classified the problem of “technological lock-in” as a Schumpeterian idea.

Table 1. Schools of Thought in Economy-Environment Relationships

Environment-Growth relationship	Conflict	Weak complementarity	Strong complementarity	
School of thought	Limits to growth	Neoclassical	Keynesian	Schumpeterian
Goal	Global equilibrium	Protecting natural capital to avoid future decline in growth	Increasing demand for environmental goods and services to stimulate short-term growth	Developing supply of clean technologies to drive long-term growth
Problem	Resource scarcity	Negative externalities are not internalized in prices	Lack of demand for environmental goods and services	Lock-in of dirty technologies
Policies	Population control, curbing consumption, increasing efficiency	Market mechanisms (Pigouvian taxes, tradable permits)	Government spending (e.g., deployment subsidies, infrastructure investment, procurement policies)	Innovation policy (e.g., research subsidies)

The full list of codings and classifications is available in an appendix below. This classification exercise is the basis of Figure 3 in the manuscript. Figure 4 is based on coding each document as centered on climate change versus environmental problems generally (water, biodiversity, desertification, etc.). We excluded the UNFCCC from this data so as not to bias the results in favor of climate change. The complete data for the figures is provided in a separate file.

² This choice reflects two considerations. First, we coded every document in the sample. So, there were no out of sample texts to do a proper ICR test on. Second, we ascribe to an intersubjective or dialogic coding standard (Ansell 2015), on which authors review and discuss codes together, rather than an “objectivist” standard implied by an ICR test. The implicit scheme of an ICR test prioritizes the reliability of a measurement tool, even at the expense of its validity. All designers of manual coding schemes know this tradeoff. Only the simplest schemes achieve high ICR scores. We simply would not be able to design a valid test for the emergence of a complex set of economic arguments with a simple scheme. Thus, the best way to achieve validity was for us to review and discuss the codes where we lacked agreement. Since there was only about a 1000 total codes, this was feasible.

3. Process-Tracing: Document Analysis and Interviews

Once we had completed the coding, we used process-tracing to inductively uncover and theorize the mechanisms and processes which led to the emergence and adoption of green growth ideas (Mahoney 2012). We used a variant of what Bennett and Checkel (2015) call the conventional constructivist and interpretive traditions in process-tracing. We first proceeded inductively to establish a clear timeline of events as well as the meanings and practices which produced them. We then worked iteratively to identify key explanatory factors and causal mechanisms. This led us to generate further observable implications, which we used to inform further rounds of research.

We used two forms of evidence to trace the emergence of green growth ideas in each organization. First, we looked at IO documents. We created a dataset that included major reports that addressed the nexus of economic growth and environmental protection. We read the documents to establish which IOs used which policy ideas when. Second, we conducted 32 semi-structured interviews. We identified interviewees in a two-step process. First, we created a dataset of major reports that addressed the nexus of economic growth and environmental protection. The authors of these reports were our first set of interviewees. They were predominantly IO staff, though some worked in research institutions or universities. Second, we asked the report authors to identify key IO officials involved in developing the IO's agenda on environment and growth. We offered interviewees three levels of confidentiality: attribution by name and title, attribution by title only, and anonymous, which explains the different referencing styles in the paper.

We used the documents and interviews to establish three key aspects of the argument:

i. When was the first adoption of “green growth,” “green economy,” or “low-carbon development” in each IO? This was an exercise in investigative journalism as we sought to triangulate between evidence offered by IO officials in the interviews and the textual record. The analysis of flagship documents gave us a starting point, but in some cases there was another report which referenced or developed the concepts that needed to be analyzed. We brought all this together to make a timeline of green growth ideas across the IOs.

ii. What policy ideas were used to justify or articulate the concepts? To really get at the meanings embedded in the documents, we used interpretive forms of textual analysis (Hopf 2002; Hopf 2007). That is, we aimed to reconstruct the networks of meaning and justification that were embedded in the text. As noted above, we were particularly interested in what academic ideas were being used. In the interviews, we asked the officials which academic sources they drew on, but more often than not the officials reported that academic and expert knowledge from outside the IO was not that important. We were nonetheless interested in whether the green growth and other concepts were accompanied by substantive shifts in policy ideas, or whether they were just new labels on old ideas.

iii. Why did policy-makers adopt the new concepts? In the beginning, we were interested in whether the impetus was coming from states or internal organizational factors (either cultural or material). But by asking open-ended questions of the interviewees (“*What explains the rise of the idea?*”; “*What has prompted policies to address green growth?*”; “*Who wanted it to happen?*”) we received complex answers about how a number of factors contributed to the outcome. Interviewees responses made it clear that there were various lines of causation operating in each case. We saw the officials creatively responding to the

problems of managing multiple pressures. Rather than trying to eliminate this complexity, we felt it was indispensable to explaining the outcomes in the case.

As outlined above, this inductive process-tracing led us to a more complex story that highlighted the role of creative learning. To grapple directly with that, we had to develop a new theory with more specific observable implications.

4. Observable Implications: Identifying and Tracing Creative Learning

Our theory posits that creative learning involves three factors: change in the problem and solution space, the pressures in the strategic situation, and modes of creative learning. This suggests a set of observable implications: when IO officials invent new ideas, they will be grappling with changes in the world and a felt problem in the strategic situation of the organization. Furthermore, each of mode of learning would leave distinct traces as they produced new concepts and policy ideas as defined above. Thus, our case studies are designed to demonstrate three key theoretical points:

i. For evidence of the influence of change in problem and solution space, we analyzed the documents and interviews for references to either the importance of climate change as a motivating problem or the green industrial policies of China and Germany as inspiration.

ii. For evidence of the strategic situation, we analyzed the documents and interviews for evidence that the new concept helped IO officials solve practical problems. This could include: managing pressure from principals, the desire to better motivate or access client states, the need to legitimate the IO vis-à-vis other actors, or the need to reinforce or negotiate organizational identities, rules, and practices. As we mention in the paper, we were careful not to pre-theorize the relevant features of the strategic situation too strictly. The relevant features depend on the perceptions and situations of IO officials which can only be determined in context through interpretive analysis.

iii. Finally, we looked for direct evidence of modes of learning. We found evidence for *conceptual combination* where IO officials created the concepts themselves, as opposed to importing them from other IOs, experts, or academic sources. We found evidence of *translation* where IOs imported a concept, but had to create new combinations of policy ideas in order to integrate the concept into the organization. We found evidence of *repurposing* where IOs took old policy ideas and integrated them with new ones under the new concept. In these latter cases, we counted ideas as new when they offered innovative arguments for, or ideas about how to realize, the strong complementarity between economic growth and environmental protection.

Point iii. raises the question of what counts as a creative product, “something new.” Creativity is a notoriously slippery concept and we wanted to make sure that we set standards of evidence such that not all action would be coded as creative action. We operationalized this as including three kinds of new things:

i. New concepts. We paid special attention to when IOs created new concepts through conceptual combination. In our scheme, we included three terms as each expressing a strong complementarity relationship between economic growth: “green growth,” “green economy,” and “low-carbon development.” Green economy is a slightly broader concept than green growth (it includes, e.g., in UNEP discourse, lifecycle analysis), but it was also used in UNEP to express the idea of strong complementarity.

ii. Innovative combinations of policy ideas. As we noted in the paper, creativity has to be new, but also recognizable to participants in the relevant communities of practice as fitting certain criteria. We operationalize this in terms of introducing substantive new policy insights relative to a baseline discourse. We operationalized the baseline discourse using Steven Bernstein’s (2001) seminal “liberal compromise of environmentalism.” As our data show, this discourse is centered on the idea that there is “weak complementarity” between economic growth and environmental protection. On this view, they are compatible with one another. This discourse featured prominently in the 1990s “sustainable development” discourse. Our own discourse analysis supports this claim by Bernstein. Considered against this baseline, the rise of ideas of “strong complementarity” were new. Strong complementarity posits that environmental protection can actually produce economic growth. These notions were fleshed out using Keynesian and Schumpeterian policy ideas, which IOs started to experiment with after 2000. So, in general, we saw evidence of introducing new ideas when IOs articulated a bold vision of strong complementarity for the first time.

We left open the possibility that such articulations were derivative, merely emulating work in other IOs. The textual evidence for this would be using not just the concept but also other stock phrases or combinations of policy ideas. But reading the documents on green growth from 2005-2012, one is struck by how different all the major policy statements of the IOs were. It was a time of ideational change and experimentation. We would have liked to provide more evidence of this in the paper, but space constraints did not allow for a clear before-and-after analyses of major policy statements in each IO. This would show differentiation both within and between IOs more clearly. But that level of detail would mean reducing the number of cases and therefore reduce the scope of the paper.

iii. The establishment of new offices, agencies, and institutions. In the narrative, we note how the emergence of the green growth concept and policy ideas then led to a wide-range of new entities charged with developing and spreading green growth ideas.

These rules do not allow us to capture the ineffable quality of producing or experiencing a truly creative work. However, they do allow us to specify a clear set of standards for declaring when IO officials exhibited creativity: i) they created a new concept; ii) they created a new combination of ideas that expressed a strong complementarity between economic growth and environmental protection; or iii) they created a new agency or institution.

Operationalizing Size

Our theoretical analyses presented a number of structural factors that outline when we should expect creative learning in IOs. Size requires a detailed operationalization. The relevant indicator of size in this paper is the size of the IO considered as a *bureaucratic organization*. It is the number

of personnel and the complexity of the tasks and routines within the organization that influences the likelihood of creative learning. We feel that the operating budget of the IO is the best proxy for the overall size and influence of the organization. Moreover, staff numbers are not consistently published by all IOs. In the case of organizations with large lending portfolios, we have separated out the project funds so that the administrative budget can be calculated.

	UNESCAP	UNEP	OECD	UNDP	World Bank
Size by operating budget (OB)	Very Small OB: \$95m	Small OB: \$511m	Small OB: \$777m	Medium OB: \$5.1b Project:\$2.28b	Large OB: \$33b Project:\$30.5b

Sources: OECD 2017, UNDP 2017, UNEP 2016, UNESCAP 2017, World Bank 2017.

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Appendix: Coding Categories

The coding categories in this scheme were inductively recovered using the procedures described above. Each coding category is an argument or a claim the text made about the appropriate goals, problem framings, or policy instruments for states. After the categories were inductively recovered from the texts, we classified them as making (N)eoclassical, (K)eynesian, (S)chumpeterian, or (L)imits to Growth claims.

Coding Category

GOALS

- G-sd sustainable development: references to “sustainable development” as the general goal of policy
- G-gg green growth: references to “green growth,” “green economy,” or “low carbon development” as the general goal of policy
- G-wc Weak complementarity: growth and environmental protection are compatible; protecting the environment is necessary to reduce poverty; poverty reduction is necessary to improve environment. (N)
- G-sc Strong complementarity: growth and environmental protection are not just compatible, but can drive one another; environmental protection can generate growth, through producing innovation and comparative advantage, etc. (K, S)
- G-cf Conflict: there are tradeoffs between growth and environmental protection; policy should prioritize environmental action or climate mitigation over growth. (L)
- G-dc Decoupling: the goal of policy is to decouple the economy from carbon/emissions.
- G-mn Mainstreaming environment: goal is to mainstream environmental problems like climate change throughout the operations of the government, especially financial/economic policy.
- G-eq Equity: references to “equitable,” “social,” or “inclusive” sustainability or green growth as a key policy goal.
- G-rd Resilient Development: “resilient” development or growth is a key policy goal.

PROBLEMS

- P-pv Poverty leads to environmental degradation
- P-wf Environmental degradation harms welfare/health/satisfaction (N)
- P-dg Environmental degradation harms productivity (N)
- P-mf Market failure: climate change/environmental degradation is a market failure; markets provide no incentives to curb pollution; climate change/environmental degradation is an externality (N)
- P-rb Rebound effect: efficiency gains leading to more consumption (Jevons Paradox). (L)
- P-se Scarcity and entropy are hard constraints on growth (L)
- P-wg Weak growth: the problem that policy must address is weak growth or recession; policy should address weak growth or the recession (K)
- P-in Innovation: the lack of environmental innovation is a problem; environmental action is hampered by technological lock-in, bottlenecks in innovation process, or obstacles to the cycle of creative destruction. (S)
- P-en Environmental problems generally: the document addresses a range of environmental problems, including water, acid rain, deforestation, ocean acidification, desertification, etc.

- P-cc Climate change: the document is focused specifically on climate change as the central or main environmental problem (most substantive policy discussion is about climate change).
- P-pr Production: the central problem of climate change and environmental degradation is high production levels, high levels of throughput in the economy, etc. (L)
- P-co Consumption: consumption is a primary cause of environmental degradation/climate change; consumers need to reduce their carbon footprints or resource use. (L)
- P-mt Metrics: the problem is that policies are targeting bad metrics (especially GDP); new indicators or targets are needed.
- P-tx Trade is problematic: trade undermines environmental standards
- P-tr Trade is positive: trade is an essential aspect of a complementarity approach.
- P-ip Institutional perspective: we need better institutions, rules, and governance in order to address environmental problems.

POLICIES

- C-co Curbing consumption: we need to cut consumption and resource extraction in order to address climate change and environmental degradation (L)
- C-ww Win-win policies: the best policies are no-regrets policies that are beneficial even in the absence of environmental effects; e.g., water management, poverty reduction)
- C-mk Market-based policy: support for creating markets that internalize the costs of emissions, environmental degradation; e.g., carbon pricing, ecosystem services. (N)
- C-pr Property rights: clarifying rights to own and use resources will reduce environmental degradation. (N)
- C-ir Incentives and regulations: the best policies combine incentives and regulations to "value environment."
- C-sx Subsidies negative: eliminate harmful subsidies, which distort the market and support externalization. (N)
- C-sd Subsidies for clean technology: support for subsidies to stimulate demand for clean technology; subsidies could provide necessary short-term stimulus. (K)
- C-rd Subsidies for R&D: support for subsidies for research and development to create/increase innovation. (S)
- C-if Infrastructure: support for infrastructure spending, especially low carbon infrastructure, grid improvements, etc. (K)
- C-pv Private sector: support for mobilizing private sector finance and investment.
- C-gv Government intervention: government intervention is necessary to resolve environmental problems; through sectoral reform and regulatory support. (K, S)
- C-iv Investment: support for investment and financial mechanisms generally as important components of environmental action.
- C-tt Technology transfer: support for the transfer of environmentally beneficial technology to developing countries; this will reduce environmental harm and equalize levels of development. (N)
- C-tp Technology for pollution reduction: support for end-of-pipe solutions that allow the production of negative externalities, so long as these are removed (e.g., carbon capture and storage). (K, S)
- C-ct Clean technology: support for the deployment of technologies that do not produce externalities (e.g., renewables). (K, S)
- C-mk- Market-based policy is insufficient (K, S)
- C-ir- Incentives and Regulations are insufficient (K, S)