



Conservation International

Climate Change Strategy - Summary

September 2006



CI and our partners have a responsibility to protect life on Earth from the global impacts of climate change.

A million or more species may be at risk of extinction due to climate change, making action on multiple levels necessary to meet and safeguard the outcomes central to CI's mission.

The strategy summarized here represents a major strengthening of CI's response to the challenges posed by climate change. It is the product of a process that began in July of 2005 with an internal review of CI's climate change response. That review involved interviews with partners and leaders in the field, consideration of current CI engagement, and relationship to CI's mission. An expanded team of CI staff developed the elements of a program for broadening and deepening CI's engagement in climate change. This intensified engagement has been endorsed by CI's board of directors.

Our vision is that CI's leadership will result in a world in which integrated solutions to biodiversity loss and climate change ensure the long-term endurance of our conservation outcomes.

Our approach is to engage partners and markets to leverage research, policy and implementation advances far beyond our own efforts. The strategy is composed of three main parts – *Research, Policy and Markets*, and *Community Conservation Projects*. Each of these parts is explained in brief in the following pages. Strategic outcomes are shown in boxes.

PART 1: CLIMATE CHANGE SCIENCE AND RESEARCH

Sound science is the foundation of CI's climate change activities. As investments in policy and field implementation increase, maintaining a strong science and research effort will be essential to the success of these new initiatives. Research efforts will be centered in The Center for Applied Biodiversity Science (CABS), but will involve collaboration with many parts of CI and external collaborators.

Terrestrial and Marine Research Centers of Excellence

CI will develop ten regional climate research centers with local, hotspot-based partners focusing on areas that will be featured in the field implementation. Four centers shall address marine issues, and six shall have a terrestrial focus. The marine centers are targeted in the Eastern Tropical Pacific, Brazil, Southern Indian Ocean, and Indonesia/Papua. Terrestrial centers will focus on MesoAmerica, Tropical Andes, Brazil, South Africa/Madagascar, Southeast Asia and China.

Establishment of the centers will be phased, beginning with the existing South Africa collaboration, Brazil, China and the Eastern Tropical Pacific centers in the first year, adding 2-3 centers in each of the succeeding two years.

Collaborative research centers will assess the climate change impacts for terrestrial and marine corridors associated with CI and partner conservation targets in 10 priority landscapes and seascapes.

Marine Physical Impacts Research

Research into the physical effects of rising CO₂ levels and climate change on ocean environments is particularly needed as effects such as sea-level rise, changing ocean currents, ocean warming, and ocean acidification are already impacting priority marine conservation areas.

Ocean Acidification:

One of the least understood effects of climate change is the increasing acidity of the oceans, which is a consequence of increasing atmospheric CO₂. This change has major implications for any species with a carbonate skeleton, such as corals and microscopic phytoplankton that form the basis of the ocean food chain. This change in seawater chemistry is predicted to have dramatic effects on marine ecosystems throughout the oceans as soon as 2050. There is an immediate need for further research on the effect of increased ocean acidity on marine ecosystems.

CI and partners will conduct research needed to understand how the impacts of increasing ocean acidification on marine species will affect the functioning of ecosystems in at least four CI seascapes.

Ocean Currents Research:

Climate change will bring about dramatic changes in ocean currents. The ocean's ecosystems depend on the currents to move nutrients and spawning larvae, and to provide transport to migrating species, ranging from sardines to whales. Changing the

ocean's current systems will therefore have serious implications for marine ecosystems and species.

CI will coordinate a study and evaluate how climate change is likely to change the dominant current systems in key marine conservation areas.

Understanding Social Resilience

An important aspect of both marine and terrestrial impact research is social resilience to climate change. Climate change has the potential to drive income-replacement strategies on a large scale in regions where technical approaches to sustaining farm or fisheries incomes in the face of climate change have not been developed. Accordingly, CI will seek partnerships with agricultural and fisheries institutes working on sustainable agriculture and fisheries production in the face of climate change. The program will seek to provide resources to help consider biodiversity in plans for sustaining farmer and fisher livelihoods under climate change.

A major area of research will be to analyze social and ecological resilience to climate change. Social resilience is the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change. Do social and ecological resilience covary? Are rural peoples who live in diverse and intact ecosystems less vulnerable to the impacts of climate change, including abrupt shocks and natural hazards? How will human vulnerability affect biological systems (affected in their own right but perhaps doubly impacted by human actions)?

CI and partners will conduct research needed to understand how the impacts of climate change will affect socio-economic resiliency in the terrestrial and marine priority areas. Strategies will be developed to help communities respond to climate change in ways that maintain incomes and biodiversity.

PART 2: CLIMATE POLICIES AND MARKETS

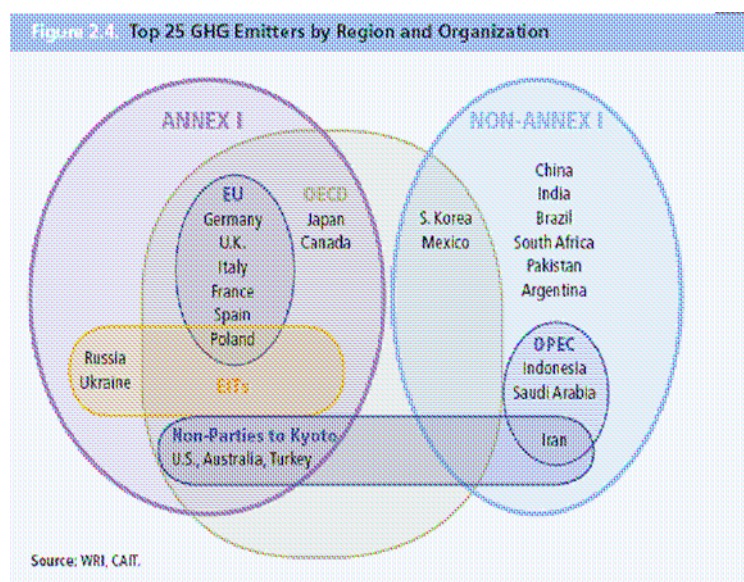
Some background context is helpful to begin our assessment of CI's recommended policy engagements. Figure 2.1 (below left), from the World Resources Institute report, *Navigating the Numbers*, lists the world's top 25 greenhouse gas (GHG) emitting countries. These 25 countries constitute nearly 85% of total global GHG emissions. Figure 2.4 (below right) indicates the top emitters by region and various organizations, with developing countries in the Non-Annex I circle.

Comparison of data sets from WRI (Top 20 tropical countries with potential carbon storage) and CI (Worldwide ranking of these countries by species endemism and richness) reveal the opportunity for simultaneously mitigating climate change and protecting threatened biodiversity. Brazil, Indonesia, India, Mexico rank, respectively 1, 2, 4 and 6 in carbon storage potential.

Figure 2.1. Top GHG Emitting Countries
CO₂, CH₄, N₂O, HFCs, PFCs, SF₆

Country	MTCO ₂ equivalent	% of World GHGs
1. United States	6,928	20.6
2. China	4,938	14.7
3. EU-25	4,725	14.0
4. Russia	1,915	5.7
5. India	1,884	5.6
6. Japan	1,317	3.9
7. Germany	1,009	3.0
8. Brazil	851	2.5
9. Canada	680	2.0
10. United Kingdom	654	1.9
11. Italy	581	1.6
12. South Korea	521	1.5
13. France	513	1.5
14. Mexico	512	1.5
15. Indonesia	503	1.5
16. Australia	491	1.5
17. Ukraine	482	1.4
18. Iran	480	1.4
19. South Africa	417	1.2
20. Spain	381	1.1
21. Poland	381	1.1
22. Turkey	355	1.1
23. Saudi Arabia	341	1.0
24. Argentina	289	0.9
25. Pakistan	285	0.8
Top 25	27,915	83
Rest of World	5,751	17
Developed	17,355	52
Developing	16,310	48

Notes: Data is for 2000. Totals include emissions from international bunker fuels and land use change and forestry.



Of most interest are the six developing countries with biodiversity hotspots and wilderness habitat: China (No. 2 GHG emitter), India (No. 5), Brazil (No. 8), Mexico (No. 14), Indonesia (No. 15), and South Africa (No. 19).

Land-use change, which includes the 14 million hectares of annual tropical deforestation, currently accounts for 20 percent of total global GHG emissions. Indonesia, Brazil and Mexico rank No. 1, 2 and 3, respectively.

CI will therefore engage at international, regional and national levels on policy reform to reduce greenhouse gas emissions, with a focus on tropical land-use change but also with a strong recognition that developed countries with fossil fuel emissions have been most of the problem historically and must lead in implementing solutions. We will work with partners to harness the power of carbon markets stemming from international policies to help conserve forests and avoid undesired impacts on biodiversity.

Global Policy

CI will invest in a global climate change policy program that supports public awareness and policy actions to curtail the impacts on biodiversity associated with climate change. These actions will involve outreach to ensure global climate policies appropriately reflect and address impacts on biodiversity and local communities.

Recent initiatives to target stabilization of greenhouse gases in the atmosphere at 450 ppm CO₂ (or a 2 degrees Celsius mean global temperature increase) are consistent with minimizing dangerous climate change impacts on biodiversity.

CI and its partners will work to convince regulators and policymakers to include deforestation prevention along with forest restoration as creditable and tradable mitigation actions in policy mechanisms, such as a Kyoto Protocol post-2012 framework and the EU Emissions Trading Scheme. Within these markets, CI will promote multi-benefit carbon forestry projects, using the Climate, Community and Biodiversity (CCB) Standards (www.climate-standards.org).

Through CI's work, global policy will recognize the importance of biodiversity in setting targets for stabilizing greenhouse gases in the atmosphere.

Global policy will address feedback effects of climate impacts on biodiversity due to reduced ecosystem resiliency and expanding agricultural frontiers in biodiversity hotspots.

Global and regional climate change adaptation funding typically focused solely on human adaptation shall be expanded to include biodiversity adaptation and its interactions with local community adaptation.

Regional and Country-level Policy

CI has the ability and experience to work with partners to positively impact both regional and country-specific climate change policies that result in both direct and indirect impacts on biodiversity. Such policies foster the development of emerging carbon markets that provide opportunities for developing countries to capture funding to undertake climate mitigation and adaptation activities.

Key country and regional policy strategies will include important actions that simultaneously protect climate and biodiversity, while reducing poverty: promoting extensive efficiency improvements in the delivery of energy and water services and higher performance and productive use of resources and land; accelerating large-scale expansion of combined heat and power (CHP), wind farms, and solar photovoltaic power systems; facilitating rapid improvements in vehicle and heavy truck fleet efficiencies; promoting smart-growth best land practices for urban sectors; and reducing black soot released from burning crop wastes and coal, which climate scientists have shown to be both a major source of global GHG emissions and having adverse regional climate impacts (especially in China).

Key governments will support stabilizing greenhouse gas concentrations at lower-end targets beneficial to biodiversity, and corporations support CI's policy efforts.

China, Brazil and other key governments will develop biodiversity-friendly rules for climate mitigation and adaptation projects, and successfully link global and regional agreements to meet multiple objectives under the Kyoto Protocol, the Convention on Biological Diversity, the RAMSAR Convention on Wetlands of International Importance, and the Millennium Development Goals.

Avoided Deforestation Policy

Nobel Laureate of Economics Joseph Stiglitz emphasizes that including incentives to reduce emissions from deforestation in global carbon markets is one of the most immediate and economically attractive ways of reducing poverty and spurring sustainable livelihoods. Nearly 100 billion tons of avoided CO₂ emissions could be traded, and billions of dollars in revenue could be achieved, if developing countries commit to protecting their vast rainforests and biodiversity habitats from burning or permanent clearing.

The inclusion of preventing deforestation and restoring native forests in all global policies and carbon markets would: 1) support a major goal of the Convention on Biological Diversity (CBD) to protect and restore high biodiversity areas; 2) provide a major revenue source for carbon- and biodiversity-rich, but impoverished, developing countries by establishing a global carbon trading market; and 3) include an opportunity to simultaneously further the Millennium Development Goals (MDG) to reduce poverty.

CI will work with key developing country governments to engage policymakers involved in the UNFCCC and other policy regimes to include emissions reductions from reduced deforestation and other land-use change as a creditable activity.

CI will work with international rule makers to include the benefits of intact ecosystems and wilderness areas in adaptation funding and community impacts.

Afforestation/Reforestation Policy

The European Union Emissions Trading Scheme (EU ETS) currently accounts for half the entire volume of global carbon transactions, and influences all other existing and emerging carbon markets around the world. During the next few years the Europeans will decide whether to allow credits from land-based carbon mitigation projects (currently excluded) into the second phase of the ETS (covering the period 2008 onwards).

In 2005, the Kyoto Protocol entered into force, and the European Union Emissions Trading Scheme (EU ETS) began trading emissions reductions. The EU ETS, and markets in the U.K., Japan, and Canada, provide CI and our partners with an important opportunity to influence the rules and methods governing land-based carbon offsets allowed by these developing markets.

CI will work with key European governments and other partners to convince regulators and policymakers to allow forest restoration as a creditable and tradable mitigation action within the EU ETS as a first step, with an emphasis on multiple-benefit projects. As a second step, CI will work with developing country policy makers to allow avoided deforestation emissions reductions as creditable and tradable.

CI will build a compelling case for broad adoption of a standardized set of criteria called the Climate, Community and Biodiversity (CCB) Standards to reduce risks and expand both the regulatory and voluntary markets that fund multi-benefit conservation carbon projects.

GHG Reductions - Identify and foster the development of new funding sources and mechanisms to support the start-up costs of multiple-benefit projects

Even with growing demand for land-based carbon mitigation credits, start-up funding for multiple-benefit projects remains very limited. This is thwarting the entire land-based carbon mitigation market, since the lack of up-front capital prevents most project developers from getting their projects off the ground and to the point of financial self-sustainability from the sale of carbon credits. These might include multilateral financial institutions (e.g., GEF, World Bank, Asian Development Bank, UNDP MDG Carbon Facility), philanthropic institutions (e.g., MacArthur, Pew), private sector (e.g., Climate Change Capital), banks (e.g., Triodos), or host-country sources. 'Market pull' or other incentive mechanisms will also be developed with the World Bank and other donors.

CI and our partners will to establish new and sustained financing for developing CCB and avoided deforestation projects.

Biodiversity-Friendly & Climate-Friendly Energy Scenarios

Moving through the 21st century, both China and the USA face serious internal barriers to transition to climate- and biodiversity-friendly renewable fuels because: 1) coal is abundant; 2) the pollution costs and other externalities are not fully included in the price; 3) cost-effective regulations and enforcement actions fail to be taken; 4) subsidies, R&D funds, and regulatory treatment remain skewed and 5) most of the support for renewables is going into ecologically unsustainable and questionable investments (i.e., large-scale hydrodams in China and corn-based ethanol in the USA).

The energy path pursued by these two countries will play a profound role in shaping, if not locking-in, long-term global energy investment and consumption patterns, GHG emission levels, and adverse impacts and rising threats to biodiversity.

A key dimension of this effort is to engage key Fortune 500 corporations and their suppliers that operate in China, to help lead the effort for getting Integrated Resource Planning (IRP) and related best policies and best practices widely adopted.

CI, working in collaboration with local partners, will convene an IRP process that is applied to China's electricity, natural gas and water investments, with investment decisions based on reducing biodiversity threats and accruing other ancillary values and benefits.

PART 3: IMPLEMENTING TERRESTRIAL AND MARINE COMMUNITY CONSERVATION PROJECTS

The centerpiece of CI's climate strategy is the implementation of terrestrial and marine conservation projects that simultaneously achieve biodiversity, climate change and community benefits.

Within each region and marine area, CI will 1) seek community-implemented solutions that allow key biodiversity areas to adapt to or be resilient to climate change, 2) promote reforestation to take advantage of financing from the regulatory carbon markets, 3) promote the reduction of emissions through forest protection because immediate funding can be provided by voluntary carbon markets, and 4) develop a suite of robust climate- and conservation- relevant actions to ensure that economic and community benefits are resilient and sustainable over the longer term. These projects will have globally-important demonstration effects, inspiring other initiatives that produce positive impacts for both biodiversity conservation and climate change. They will be coupled with improved monitoring programs to assess the ongoing impacts of climate change on marine and terrestrial biodiversity, and to assess the effectiveness of conservation strategies and management actions designed to respond to climate change.

Terrestrial Implementation Projects

CI will engage partners to work with communities, communicate corridor objectives and engage in conservation programs. We will undertake limited initiatives directly where no suitable partnerships are present, but also in conjunction with capacity building activities.

CI has identified a number of regions, corridors and seascapes that have the potential to meet the enabling factors for the scaling-up of multiple-benefit projects. The terrestrial implementation projects can take advantage of funds from the sale of carbon offsets to the extent that the projects result in successful climate mitigation. The six priority regions that have been identified are the Mountains of Southwest China, Polynesia-Micronesia, Indo-Burma, Madagascar and the Indian Ocean Islands, Eastern Afromontane, and Mesoamerica. The current seascapes noted in the Marine Managed Areas effort and other seascapes will be analyzed with respect to climate related threats and they will be targeted for climate change implementation projects.

Brazil, Indonesia, Democratic Republic of Congo, and Papua New Guinea have some of the highest emissions related to tropical deforestation. These countries or regions within these countries should be targeted for programs because of the opportunity for demonstration effects to meet policy objectives, for example. Policy efforts in countries such as Papua New Guinea and the Democratic Republic of Congo, partners involved in the Coalition for Rainforest Nations, may be supported by pilot implementation projects or monitoring projects. Already, there are leading climate adaptation and carbon offset pilot projects in Madagascar, the Tropical Andes, South Africa, Indonesia, the Philippines and other regions that will be considered for implementation projects as deemed a priority by the regional programs.

CI will pilot multi-scale climate implementation activities in at least three biodiversity conservation corridors, covering over 1 million hectares, in conjunction with local communities and governments.

Marine Implementation Projects

Multi-scale climate activities will be implemented in five biodiversity seascapes and marine managed areas.

Monitoring

A biodiversity monitoring system will be established to monitor areas both within and outside key terrestrial and marine regions for ecosystem condition and responses to management measures, and used as a basis for estimating possible future scenarios.

Capacity Building and Community Engagement

In order to scale-up climate related implementation projects on-the-ground, capacity building activities must be prepared prior to or in conjunction with project design and implementation in the targeted regions. Implementation capacity building will complement centralized scientific training in understanding climate change (see Part 1 above), emphasizing field implementation skills and integration with the established CI corridor, protected areas and species conservation planning frameworks.

CI will develop technical and operational capacity of CI's regional programs and NGO partners, work with the key government agencies to complete climate related capacity-building activities, and build the understanding and support of local communities.

Communities, governments, local NGOs and stakeholders aware of climate change, its potential impacts and opportunities to collaborate with CI and other partners on responses beneficial to impacts on both communities and biodiversity.

Biofuels and Agro-Energy Expansion

With high world oil prices and international pressure for the reduction of the greenhouse gas emissions, there is accelerating momentum in Brazil and other countries for greatly expanding sugarcane and oil plantations to increase ethanol and biodiesel production for both the internal and export markets.

The expansion of the agricultural production into sensitive areas of ecologically complex ecosystems may result in irreversible damage and should be addressed by governments and civil society. A recent example of the negative impact of the expansion of plantations in Brazil, which can pose a new threat to pristine ecosystems, was the increase of deforestation of the Amazonian rainforest for soybean plantation, in the year 2001-2002, in which the deforestation of 23,260 km² was well above the 15,000 km² estimated a year before. Between 2002 and 2006 soy expansion has removed 7 million hectares of Amazonian rainforest.

Depending on the origin of the biofuel – soybean, sugarcane, castor oil plant and oil palm -- the dynamic of the process of biodiversity loss is different. Biofuel advocates, governments and environmental proponents should ensure the expansion of biofuels is

not a direct initiator of deforestation in rainforest areas or degradation in other sensitive ecosystems.

CI and our partners will convene a cross-functional group of researchers, corporations, scientists and policy makers to assess the threats posed by biofuels expansion and the opportunities for protecting intact ecosystems and preventing adverse impacts on biodiversity conservation. This effort will compile and disseminate the latest research and monitoring of biofuels industry expansion, and integrate these findings into the policies and conservation strategies of key countries, high biodiversity wilderness areas and biodiversity hotspots.

CONCLUSION: IMPLEMENTATION AND PHASING

This program will be implemented in several phases over the next five years. A first two-year phase will begin in 2007. Early implementation priorities are 1) the addition of capacity to engage in policy, 2) select research activities, especially in the marine realm, and 3) the launch of field implementation projects in priority marine and terrestrial regions. As these first-phase efforts are established and mature, additional activities will be added in subsequent phases.

A full copy of the climate change strategy is available to all CI employees on the intranet. Contact people for questions or contributions to the climate change strategy are Lee Hannah (Science and Research), Michael Totten (Policy and Markets), Ben Vitale (Markets, carbon projects) and Emily Pidgeon (Marine).