

Summary

C4 EcoSolutions is a consulting company that designs and implements climate change adaptation and mitigation projects in both the public and private sectors. The four C's in C4 refer to Climate, Communities, Conservation and Carbon. The diverse skillset amongst the C4 team of professional consultants – which includes ecology, economics and social science – enables us to integrate these four focal areas into our projects. Our main clients include UN Environment, UNDP, FAO, IFC, IFAD, GIZ, and the governments of a wide range of developing countries. Over the past decade, C4 has worked in 80 countries across Africa, Asia, Central America, and the Caribbean.

List of acronyms used in project descriptions below

AF	Adaptation Fund	LDC	Least Developed Country
EbA	Ecosystem-based Adaptation	LDCF	Least Developed Countries Fund
FAO	Food and Agricultural Organisation	NAP	National Adaptation Plan
GEF	Global Environment Facility	UNDP	United Nations Development Programme
GCF	Green Climate Fund	SCCF	Special Climate Change Fund

Record of current and completed projects undertaken by C4

Project	Ecosystem-based Adaptation to increase climate resilience in the Central American Dry Corridor and Arid Zones of the Dominican Republic
Country	Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panamá & the Dominican Republic
Client	UN Environment
Duration	2018
Description	C4ES is leading the development of a Concept Note for this GCF-funded project. The project will build the resilience of communities to the impacts of increasing temperatures, droughts and extreme rainfall events threaten the livelihoods of vulnerable communities in Central America's Dry Corridor and the Dominican Republic's Arid Zones. These impacts will be addressed at the landscape and household level in prioritised watersheds by promoting: i) Ecosystem-based Adaptation (EbA) across forests and agroforestry systems; and ii) water-efficient technologies in communities. This will be achieved through: i) capacity building for local governments, financial institutions and communities; ii) loans and microfinance for EbA activities and small green businesses; iii) mainstreaming EbA into policies and creating incentives; and iv) on-the-ground implementation of EbA.

Project	Enhancing Climate Resilience and Water Security in Bahrain
Country	Kingdom of Bahrain
Client	UN Environment
Duration	2018
Description	C4ES is leading the development of a Concept Note, Funding Proposal and Feasibility Study for this GCF-funded project. The project will support the Government of Bahrain to enhance water security under future climate conditions. The proposed project will build the resilience of Bahrain's water sector to climate change by using new innovative technologies to treat wastewater, reduce extraction of groundwater and supplement aquifer recharge.



Project	Bukit Tigapuluh Sustainable Landscape Project (Project Pangolin)
Country	Indonesia
Client	UN Environment
Date	2018
Description	C4 is leading the development of a Funding Proposal and Feasibility Study for this GCF-funded project. The project is pioneering sustainable rubber plantation in Indonesia and will mitigate carbon emissions through: i) the planting of rubber as well as indigenous forest trees in degraded landscapes; and ii) reducing deforestation of high-carbon stock forests adjacent to the rubber plantations.

Project	Angola Urban EbA: Using an EbA approach to increase the resilience of three cities in Angola to climate change
Country	Angola
Client	UN Environment
Duration	2018
Description	C4 is developing a Project Identification Form for this GEF-LDCF project. The project will: i) improve access to climate information to inform climate-resilient planning and development in cities; ii) reduce the vulnerability of poor urban communities to climate change through the implementation of adaptation interventions in target cities; iii) strengthen the technical and institutional capacity of local and national governments to integrate adaptation into development planning; and iv) enhance knowledge and awareness among the public – including government, NGOs, and local communities – of this approach.

Project	Building the resilience of Kune-Vaini Lagoon through Ecosystem-based Adaption
Country	Albania
Client	UN Environment
Duration	2018
Description	C4 provides ongoing technical advice as Chief Technical Advisor to this project implemented by UN Environment. The work includes budget revisions, workplan development, preparing Terms of Reference, overseeing M&E and writing of summary reports. The project will increase the resilience of the Kune-Vaini Lagoon system and communities living nearby it through EbA measures such as dune stabilisation and riparian forest restoration

Project	Strengthening the resilience of the most vulnerable coastal communities to climate change in the Philippines' Eastern Seaboard
Country	Philippines
Client	UNDP
Date	2018
Description	C4 is leading the development of a Funding Proposal and Feasibility Study for this GCF-funded project. The project will support the Government of the Philippines to enhance the resilience of vulnerable coastal communities along the Eastern Seaboard to climate change and extreme weather events. The project will catalyse a shift towards ecosystem-centred and community-based approaches to adaptation in the country's approach to coastal planning and development, with a focus on Integrate Coastal Zone Management. This will be achieved by: i) assessing the vulnerability of coastal communities to extreme climate events; ii) supporting community- and ecosystem-based livelihoods that are resilient to climate change; and iii) integrating climate change into local planning, including comprehensive land use plans for vulnerable coastal zones.

Project	Improving resilience of food security and water management to climate variability and change
Country	Ghana
Client	UN Environment



Date	2018
Description	C4 is leading the development of a Concept Note under the Simplified Approval Process for this GCF-funded project. The project will build on GCF readiness programme activities to elicit a paradigm shift in Ghana's approach to water and drought management, with a focus on improving food security under conditions of climate change. This will be achieved by: i) building institutional capacity for water and drought management; ii) enhancing hydrometeorological service delivery systems; iii) implementing innovative water management practices; and iv) improving knowledge management frameworks.

Project	Urban Ecosystem-based Adaptation for climate-resilient development in the Kathmandu Valley, Nepal
Country	Nepal
Client	UN Environment
Date	2018
Description	C4 is leading the development of a Project Document for this GEF-funded project. The proposed project will integrate the use of urban EbA to reduce the impacts of climate change and promote green infrastructure in the Kathmandu Valley, Nepal. This will be achieved by: i) developing the capacity for municipalities to include urban EbA into their planning processes; ii) strengthening knowledge management for EbA in Nepal to include urban EbA; and iii) implementing urban EbA interventions to strengthen the climate resilience of local communities living in the Kathmandu Valley.

Project	The nexus approach for building resilience to climate change in Swaziland
Country	Swaziland
Client	Acclimatise
Date	2018
Description	C4 is leading the development of a Concept Note for this GCF-funded project. The project will strengthen the climate resilience of mountain catchments in Swaziland by implementing a climate-resilient integrated catchment management approach that incorporates EbA and ecosystem-based businesses for local communities.

Project	Climate-proofed Water Supply and Sanitation for Livingstone, Zambia
Country	Zambia
Client	Global Water Partnership
Date	2018
Description	C4 is developing a Concept Note for this GCF-funded project that will be implemented in Livingstone, Zambia. The project outcomes will increase the resilience of Livingstone's water supply to climate change-induced fluctuations in the Zambezi River levels, while reducing emissions through the capture of methane and increased efficiency of pumping operations.

Project	An integrated landscape approach to enhancing the climate resilience of small-scale farmers and pastoralists in Tajikistan
Country	Tajikistan
Client	UNDP
Date	2018
Description	C4 is leading the development of a Concept Proposal and Project Proposal for this AF-funded proposal. The proposed project will build the climate resilience of rural communities in Tajikistan by implementing a multi-hazard oriented approach to catchment management that includes the use of EbA. This project will: i) strengthen the institutional and technical capacity for climate-risk management in Tajikistan; ii) establish EbA protocols for rural communities to strengthen climate resilience; and iii) establish knowledge management processes that help inform climate-resilient catchment management and the use of EbA in Tajikistan.



Project	Building capacity to advance the National Adaptation Planning process in Zimbabwe
Country	Zimbabwe
Client	UN Environment
Date	2018
Description	C4 is developing a NAP Readiness Proposal for the Government of Zimbabwe, that will be submitted to the GCF. Tasks include: i) conducting a stocktaking analysis of existing adaptation needs and initiatives in Zimbabwe; and iii) preparing a NAP readiness proposal in partnership with the country team in Zimbabwe and UN Environment for submission to GCF.

Project	Strengthening Lesotho's capacity to advance the National Adaptation Planning process
Country	Lesotho
Client	UN Environment
Date	2018
Description	C4 is developing a NAP Readiness Proposal for the Government of Lesotho, that will be submitted to the GCF. Tasks include: i) conducting a stocktaking analysis of existing adaptation needs and initiatives in Lesotho; and iii) preparing a NAP readiness proposal in partnership with the country team in Lesotho and UN Environment for submission to GCF.

Project	Building capacity to advance National Adaptation Plan Process in Swaziland
Country	Swaziland
Client	UN Environment
Date	2018
Description	C4 is developing a NAP Readiness Proposal for the Government of Swaziland, that will be submitted to the GCF. Tasks include: i) conducting a stocktaking analysis of existing adaptation needs and initiatives in Swaziland; and iii) preparing a NAP readiness proposal in partnership with the country team in Swaziland and UN Environment for submission to GCF.

Project	Reducing the climate change vulnerability of local communities in Uganda through Ecosystem-based Adaptation in forest and wetland ecosystems
Country	Uganda
Client	UN Environment
Date	2018
Description	C4 is developing a Project Document for UN Environment to be submitted to the LDCF. The project will reduce Uganda's vulnerability to climate change by: i) providing knowledge support through the conduction of climate change vulnerability assessments and ecosystem services mapping; ii) facilitating the integration of EbA options into forest and wetland management plans; iii) building the capacity of local communities and government authorities to plan and implement EbA as part of local and national adaptation strategies; iv) restoring degraded forest and wetland ecosystems to reduce vulnerability of local communities to climate change impacts and demonstrate adaptive benefits of EbA; iv) promoting alternative climate-resilient livelihoods to reduce pressure on forest and wetland ecosystems; v) developing a strategy for up-scaling, sustaining and replicating EbA interventions; and vi) increasing knowledge and awareness of EbA at national level through awareness-raising and long-term research.

Project	Towards a policy on indigenous bush encroachment in South Africa
Country	South Africa
Client	Duetsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Date	2017–2018
Description	C4 co-developed a report for the Department of Environmental Affairs on the problem of indigenous bush encroachment in the savannas and grasslands of South



	Africa. The report consisted of: i) a review of the nature, extent and causes of bush encroachment ii) an assessment of the impacts of bush encroachment on ecosystem services; iii) a review of the potential remedies for the problem; iv) a review of policy and legislation relevant to the management of bush encroachment; and v) an evaluation of different policy scenarios. The findings from the report were summarised in a policy brief.
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Project	Enhancing Climate Resilience in the Greater Mekong Sub-region through Ecosystem-based Adaptation in the Context of South-South Cooperation
Country	Thailand and Vietnam
Client	UN Environment
Date	2017–2018
Description	C4 co-developed a Concept Note and is now developing the Funding Proposal for this AF-financed project targeting the resilience of vulnerable communities and ecosystems located in the Greater Mekong River Basin. This objective will be achieved through three complementary outcomes: i) climate change adaptation interventions, particularly EbA, implemented by vulnerable communities in the Greater Mekong Sub-region (GMS) to manage climate change impacts, particularly droughts and floods; ii) enhanced knowledge and awareness of adaptation measures, including EbA, to shared climate change impacts in different ecosystems to promote regional cooperation, planning and implementation of adaptation in the GMS; and iii) strengthened regional cooperation on climate change adaptation, particularly in response to floods and droughts, in the GMS.

Project	Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Eritrea
Country	Eritrea
Client	UNDP
Date	2017–2018
Description	C4 developed a Project Document which was submitted to GEF. The project will mainstream sustainable land management, forestry and biodiversity conservation into land-use planning and agricultural production practices in the Nakfa Sub-Zoba of Eritrea. Land degradation will also be addressed through community participation in ecological restoration of mountain forests.

Project	Climate support programme for the implementation of a national land rehabilitation programme for South Africa
Country	South Africa
Client	Duetsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/South African Government
Date	2017–2018
Description	C4 is developing a Funding Proposal and Feasibility Study to be submitted to the GCF. The project will support the Government of South Africa to enhance the resilience of vulnerable rural communities to climate change and extreme events. Working with the South African Government's Department of Environmental Affairs and an accredited entity, C4 will assist in the development of a national programme for the rehabilitation and sustainable management of i) subtropical thickets; ii) coastal and riparian forests; iii) woodlands; iv) grasslands; and iv) wetland systems.

Project	GCF Readiness Programme in Georgia: developing a NAP Readiness proposal
Country	Georgia
Client	UN Environment
Duration	2018
Description	C4 is developing a NAP Readiness Proposal for the Government of Georgia, that will be submitted to the GCF. Tasks include: i) conducting in-country mission to meet and discuss with relevant stakeholders within and outside the government existing adaptation initiatives in Georgia and adaptation needs that the NAP could support; ii)



	collecting, compiling and analysing relevant documents relating to adaptation initiatives and needs in Georgia; and iii) preparing a NAP project proposal in partnership with the Focal Point in Georgia and the UN Environment team for submission to GCF.
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Project	Building capacity for LDCs to participate effectively in intergovernmental climate change processes (GEF project ID:5615)
Countries	Global (LDCs and non-LDCs)
Client	UN Environment
Duration	2018
Description	C4 conducted a Mid-term Reviews for this GEF-funded project. Tasks included: i) reviewing relevant project documents including PIRs, HYRs, Prodoc, Result Framework and indicators, etc.; ii) conducting interviews with relevant project partners and beneficiaries to assess strengths and weaknesses in the project so far; iii) preparing two MTR reports which include a critical analysis and evaluation of the project design, progress towards results, implementation arrangements and sustainability; and vi) formulating actionable recommendations to facilitate progress towards end-of-project targets.

Project	Assisting non-LDC developing countries with country-driven processes to advance National Adaptation Plans (GEF project ID: 1247)
Countries	Global (LDCs and non-LDCs)
Client	UN Environment
Duration	2018
Description	C4 conducted a Mid-term Reviews for this GEF-funded project. Tasks included: i) reviewing relevant project documents including PIRs, HYRs, Prodoc, Result Framework and indicators, etc.; ii) conducting interviews with relevant project partners and beneficiaries to assess strengths and weaknesses in the project so far; iii) preparing two MTR reports which include a critical analysis and evaluation of the project design, progress towards results, implementation arrangements and sustainability; and vi) formulating actionable recommendations to facilitate progress towards end-of-project targets.

Project	Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable developing countries
Country	Seychelles, Nepal, Mauritania, China
Client	UN Environment
Duration	2017–2018
Description	C4 is providing technical advisory services on this project, which builds climate resilience using EbA in LDC and Small Island Developing States of the Asia-Pacific region and Africa. It achieves this by increasing institutional capacity, mobilising knowledge, and transferring appropriate technologies on climate change adaptation to Mauritania, Nepal and Seychelles. Best-practice EbA technologies are transferred from China to the pilot countries and as such this represents China's first major adaptation project. C4 provides ongoing technical advice as Chief Technical Advisor to this project. Tasks completed by C4 in this regard have included: i) facilitating the project launch workshop; ii) developing work plans for each pilot country; ii) coordinating EbA and Regional Network workshops; and iv) developing terms of reference for project consultants. See http://www.thegef.org/gef/project_detail?projID=4934

Project	Strengthening Rwanda's capacity to advance the National Adaptation Planning process
Country	Rwanda
Client	UN Environment
Date	2017–2018



Description	C4 is co-developing a Readiness and Preparatory Support Project Document for this GEF-funded project, that will increase Rwanda's capacity to advance its National Adaptation Plan process. This project will assist the Government of Rwanda with implementing the NAP process by strengthening its: i) technical and institutional capacity for medium- and long-term adaptation planning; ii) technical capacity to mobilise funding for climate change adaptation; and iii) scientific capacity to monitor, evaluate, and generate knowledge on adaptation interventions. Such strengthening will be achieved through three components, namely: i) technical and institutional capacity for the NAP process in Rwanda; ii) advancing climate-resilient technologies and practices; and iii) monitoring, reviewing and knowledge-sharing to learn from the NAP process in Rwanda.
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Project	Climate change support programme – Assessing bush encroachment, including impacts of carbon sequestration and other ecosystem goods and services in South Africa
Country	South Africa
Client	Duetsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/South African Government
Date	2017–2018
Description	C4, in partnership with Anchor Environmental, will review the bush encroachment problem in South Africa to assist the Government of South Africa to identify and formulate interventions to address the problem using the best available scientific evidence. This project will: i) assess whether bush encroachment is a form of land degradation or a carbon sink; ii) identify aggressive indigenous and alien invasive species and their hotspots and the current extent of bush encroachment across the country; iii) conduct a thorough assessment of the risks, benefits and trade-offs of different interventions; and iv) recommend appropriate/potential interventions to address bush encroachment depending on the results of the above.

Project	Developing rules/manual for greenhouse gas emissions and sinks accounting, measurement, reporting and verification procedures for the grassland, reduced/zero till and soil systems in South Africa in preparation for the imminent carbon offsetting regime
Country	South Africa
Client	Duetsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/South African Government
Date	2017–2018
Description	C4, in partnership with the Copperleaf Consortium, will develop a detailed greenhouse gas emission and sinks accounting rules and methodology guideline for carbon offsetting and net emissions reporting in the proposed South African Carbon Tax Regime. This will include assessing whether management of grasslands and reduced/zero-till agricultural systems can reduce carbon emissions. The project will: i) detail appropriate GHG accounting rules; and ii) develop monitoring, reporting and verification (MPV) guidelines.

Project	Resilience to hurricanes, floods and droughts in the building sector in Antigua and Barbuda
Country	Antigua and Barbuda
Client	UN Environment
Date	2017–2018
Description	C4 is currently leading the development of a Feasibility Study and Funding Proposal for this GCF-funded project. The proposed project will build the climate resilience of Antigua and Barbuda to the impacts of hurricanes by: i) supporting the mainstreaming of climate-proofing measures into funding mechanisms, policies and standards for the building sector; ii) strengthening technical capacity for planning, implementing and monitoring climate-proofing and other adaptation measures in the building sector; iii) assessing barriers, identify financial instruments, and develop operational guidelines



	to enable the private sector to access funding for adaptation in buildings; iv) climate-proofing identified public buildings to improve resilience to extreme climate events – including tropical storms, hurricanes, droughts and extended dry periods, floods and rising air temperatures – and improve adaptation measures during such events; and v) developing and implementing plans for climate-proofing activities and interventions in community buildings.
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Project	Improving the climate resilience of irrigation water-supply infrastructure to mudflows and floods in southern Kyrgyzstan.
Country	Kyrgyzstan
Client	UNDP
Duration	2017-2018
Description	C4ES is leading the development of a Funding Proposal and Feasibility Study for this GCF-funded project. The project will support the Government of the Kyrgyz Republic to enhance the resilience of vulnerable water supply infrastructure in southern Kyrgyzstan to the impacts of mudflows and floods. The project will invest in building the climate resilience of local communities by: i) enhancing the capacity of the Government of Kyrgyzstan to model and forecast mudflows; ii) climate proofing water supply infrastructure; and iii) improving policies, regulations and building codes for the climate-resilient water supply infrastructure.

Project	Climate resilient agricultural livelihoods in Kazakhstan
Country	Kazakhstan
Client	UNDP
Duration	2017
Description	C4 developed a Project Idea Note and Concept Note to be submitted to the GCF. This project will enhance the resilience of vulnerable communities to climate change and extreme events.

Project	GCF Readiness Programme in Guinea
Countries	Guinea
Client	UNDP
Date	2017
Description	C4 provided technical advisory services for UNDP with the task to help the government of Guinea establishing a National Designated Authority for GCF, including the related processes (letter of non-objection and coordination mechanism), and identifying national entities that could be accredited. The tasks consisted of in engaging with stakeholders within governmental and non-governmental institutions in order to: i) analyse existing institutional arrangements in Guinea and suggest an institutional framework that could serve as interface between the government and the GCF; ii) identify capacity building needs for the proposed AND and develop a training plan; iii) facilitate workshops to inform relevant stakeholders about the accreditation process for GCF; and iv) help identify national entities that could be accredited and their needs in terms of capacity building.

Project	Strengthening Iraq's capacity to advance the National Adaptation Planning process
Country	Iraq
Client	UN Environment
Date	2017
Description	C4 co-developed a Readiness and Preparatory Support Proposal for this GCF-funded project, that will strengthen Iraq's technical, institutional and financial capacity to enhance national climate resilience.

Project	Nsumbu National Park Climate Change Strategy
Country	Zambia



Client	IUCN
Date	2017
Description	C4 developed a climate change strategy for Nsumbu National Park in Zambia. The strategy was developed under the IUCN ESARO's Integrated Planning to Implement the Convention on Biological Diversity (CBD) Strategic Plan and Increase Ecosystem Resilience to Climate Change Project. This project is implemented in Tanzania, Zambia, Vietnam and Colombia and is funded by the German Federal Ministry of Environment, Building and Nuclear Safety (BMUB). The Integrated Planning Project will increase capacity to optimise land use planning that supports biodiversity conservation and climate change adaptation objectives, including the effective engagement of protected area systems.

Project	Building the resilience of urban populations in Laos with ecosystem-based adaptation (EbA)
Country	Laos
Client	UN Environment
Date	2017
Description	C4 developed a Funding Proposal and Feasibility Study which was submitted to the GCF. This project will be implemented in six cities in Laos. The Laotian cities of Vientiane, Luang Prabang, Paksan, Savannakhet, Thakek and Pakse are rapidly growing urban areas directly adjacent to the Mekong River. All six cities are impacted by river flooding and flash floods, both of which will be exacerbated by climate change. The outputs of this project will: i) improve policy and planning for urban EbA and flood management; ii) build local institutional capacity for managing urban EbA; iii) build the resilience of vulnerable urban areas to both river and flash floods through urban EbA; and iv) facilitate knowledge-sharing around urban EbA for flood management.

Project	Strengthening Cameroon's capacity to advance the National Adaptation Planning process.
Country	Cameroon
Client	UN Environment
Date	2017
Description	C4 co-developed a Readiness and Preparatory Support Proposal for this GCF-funded project, that will strengthen Cameroon's technical, institutional and financial capacity to enhance national climate resilience.

Project	FAO Intégrer la résilience climatique à la production agricole et pastorale pour la sécurité alimentaire dans les zones rurales vulnérables à travers l'approche champ école des producteurs
Countries	Burkina Faso
Client	FAO
Date	2017
Description	C4 provided technical advisory services for this FAO-funded project. Tasks consist of: i) reviewing, analysing and identifying best practices for climate-resilient agropastoralism; ii) discussing and validating the identified practices with national and regional stakeholders at regional and national workshops; and iii) facilitating the dissemination of best practices for climate-resilient agropastoralism through the publication of reports and radio shows targeting the local communities.

Project	Strengthening Mauritania's capacity to advance the National Adaptation Planning process.
Country	Mauritania
Client	UN Environment
Date	2017
Description	C4 co-developed a Readiness and Preparatory Support Proposal for this GCF-funded project, that will strengthen Mauritania's technical, institutional and financial capacity to enhance national climate resilience.



Project	Climate change adaptation in the arid regions of Adrar, Inchiri and Trarza, Mauritania
Country	Mauritania
Client	UN Environment
Date	2017
Description	C4 developed a Project Identification Form for this project funded by the GEF/LDCF. The project will strengthen the adaptive capacity of rural communities and government in the arid Mauritanian <i>wilayas</i> of Adrar, Inchiri and Trarza through the introduction of ecosystem-based adaptation (EbA). The project will focus on improving the management of water and other natural resources in these climate-vulnerable target communities.

Project	Building the climate resilience of small and medium agricultural enterprises in Kazakhstan
Country	Kazakhstan
Client	UNDP
Date	2017
Description	C4 developed a Concept Note and Pre-Feasibility Study to be submitted to the GCF. C4 previously developed a Project Idea Note that provided the groundwork for this proposal. The project will enhance the resilience of vulnerable communities to climate change and extreme events. It will enable small and medium agricultural enterprises (SMEs) to access finance for climate resilient adaptation practices and technologies through three interrelated outputs: i) enhanced capacity of agricultural SMEs to implement adaptation practices and technologies; ii) strengthened technical capacity of KazAgro – a national agricultural financing institution – to finance adaptation practices and technologies; and iii) adaptation practices and technologies implemented through the disbursement of loans to agricultural SMEs.

Project	Enhancing climate resilience in the Greater Mekong Sub-region through ecosystem-based adaptation in the context of South-South cooperation
Country	Thailand, Vietnam and China
Client	UN Environment
Date	2017
Description	C4 developed a Concept Note for this AF-funded project. The project will reduce the vulnerability of communities in the Greater Mekong Sub-region (GMS) to climate change and improve regional coordination on flood and drought management. The project will also promote South-South cooperation, sharing knowledge on ecosystem-based adaptation throughout the GMS.

Project	Adapting to Climate Change in Lake Victoria Basin
Country	Burundi, Kenya, Rwanda, Tanzania and Uganda
Client	UN Environment
Date	2016
Description	C4 developed the Concept Note and a Project Proposal for this AF-funded project. This project will increase climate resilience in the Lake Victoria Basin at both a regional and local level by implementing regional and community-based climate change adaptation interventions.

Project	Promoting sustainable forest management and improving livelihoods through integrated land-use planning and forest landscape restoration
Country	Sri Lanka
Client	FAO
Date	2016
Description	C4 developed a Project Document for this project to be funded by the GEF Trust Fund. The project will promote sustainable forest management and enhance rural livelihoods through forest landscape restoration, improved agroforestry practices and integrated land-use planning in Sri Lanka. It will achieve this by: i) enhancing the contributions of



	trees-outside-forests to food security, income, and biological diversity; ii) building national capacity for forest landscape restoration; iii) establishing incentive mechanisms to enhance the contribution of forest ecosystem services to local livelihoods; iv) reducing pressures on natural forests through integrated land-use planning at landscape level; and v) enhancing the national knowledge base for sustainable land management.
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Project	Large-scale Ecosystem-based Adaptation in The Gambia: developing a climate-resilient, natural resource-based economy
Country	The Gambia
Client	UN Environment
Date	2015–2016
Description	C4 developed the Funding Proposal and Feasibility Study that was submitted to the GCF. This project will build the climate resilience of rural Gambian communities and facilitate the development of a sustainable natural resource-based (green) economy through the implementation of large-scale EbA. Activities will be implemented within three components: i) large-scale EbA to build a climate-resilient natural resource base; ii) development of markets for natural resource-based businesses; and iii) policy support, institutional strengthening and knowledge generation to support large-scale implementation of EbA.

Project	Enhancing Climate Resilience of India's Coastal Communities
Country	India
Client	UNDP
Date	2016
Description	C4 developed Funding Proposal and Feasibility Study which was submitted to the GCF. The project will support the Government of India to enhance the resilience of vulnerable coastal communities, particularly women, in the coastal areas of India to climate change and extreme events. The project combines GCF grant finance with significant leveraged co-finance. It will shift the coastal development paradigm such that ecosystem-centred and community-based approaches to adaptation are integrated into coastal management and planning by the public sector, the private sector and civil society. This will be achieved through: i) investing in ecological infrastructure to buffer against climate-induced hazards, especially storm surges; ii) supporting climate-resilient coastal livelihoods; and iii) enhancing climate-risk informed cross-sectoral planning and governance of the coastal zone.

Project	Promoting the adoption and financing of climate-resilient agricultural practices and technologies by smallholder farmers in Zambia
Country	Zambia
Client	UNDP
Date	2016
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of national and local institutions in the agricultural sector; ii) increase the resilience of smallholder farmers to the effects of climate change through climate-resilient land management techniques; and iii) support investments in climate change adaptation within Zambia's agricultural sector.

Project	Adapting Afghan communities to climate-induced disaster risks
Country	Afghanistan
Client	UNDP
Date	2016
Description	C4 developed a Project Document for this GEF/LDCF-funded project. This project will: i) increase the institutional and technical capacity in national and provincial government agencies to collect, analyse and disseminate climate information and assess weather-induced disaster risks; ii) design and implement community-based early warning systems; iii) support the adoption of climate-resilient livelihoods in



	vulnerable communities; and iv) promote the inclusion of climate change considerations in national and provincial development plans and policies.
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Project	Climate resilient landscapes for sustainable development
Country	Ghana
Client	UN Environment
Date	Ongoing since 2015
Description	C4 is co-developing a Concept Note and Feasibility Study for this GCF-funded project. This project will enhance the climate-resilience of smallholder farming communities in northern Ghana by improving food security and growing the agro-based rural economy.

Project	Improving climate resilience in Benin
Country	Benin
Client	UN Environment
Date	Ongoing since 2015
Description	C4 is co-developing a Concept Note, Funding Proposal and Feasibility Study to be submitted to the GCF. This project will enhance the climate-resilience of communities living near forested areas in Benin.

Project	Reducing GHG emissions through community forests and sustainable biomass energy
Country	Afghanistan
Client	FAO
Date	2012–2015
Description	C4 developed a Project Identification Form and a Project Document for this project funded by the GEF Trust Fund. The objective of the project is to reduce GHG emissions from two pilot areas in Afghanistan by promoting community forestry, removing barriers to sustainable biomass energy and laying the groundwork for future climate change mitigation projects in Afghanistan. See http://www.thegef.org/gef/project_detail?projID=5610

Project	Building resilience of communities living around the Northern Pistachio Belt and Eastern Forest Complex of Afghanistan through an Ecosystem-based Adaptation approach
Country	Afghanistan
Client	UN Environment
Date	2015–2016
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will build the capacity of local communities living around the Northern Pistachio Belt and Eastern Forest Complex of Afghanistan to the effects of climate change by improving watershed functioning through Ecosystem-based Adaptation approaches. This will be achieved by: i) building government's capacity to address climate risks through improving watershed functioning; ii) improving the climate resilience of local communities through restoration of degraded forests; and iii) developing the knowledge base on forest restoration as an EbA approach in Afghanistan. See: http://www.thegef.org/gef/project_detail?projID=5664

Project	Mapping of Potential Spekboom Restoration Areas in the Calitzdorp Domain
Country	South Africa
Client	Casidra, Gouritz Cluster Biosphere Reserve and LandCare
Date	2015–2016
Description	C4 undertook a field-mapping exercise to identify potential areas for spekboom (<i>Portulacaria afra</i>) restoration in the Calitzdorp area of the Klein Karoo. This assessment: i) determined the historical and current extent of spekboom vegetation types within the area; ii) mapped restoration potential – i.e. currently degraded areas



	that were historically spekboom-rich vegetation types – at a scale of 1:15,000 within the domain; iii) gauged the willingness of land owners and land users to participate in restoration activities; and iv) developed restoration protocols and standard operating procedures to guide restoration activities within the Calitzdorp planning domain.
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Project	Flood hazard and climate risk management to secure lives and assets in Mali
Country	Republic of Mali
Client	UNDP
Date	2015–2016
Description	C4 developed a Project Document for this GEF/LDCF-funded project. This project will: i) increase availability of and access to climate information including the generation and dissemination of climate forecast information and flood early warnings; ii) increase public awareness on climate-related hazards; iii) promote mainstreaming of disaster risk management into policies, development plans and budgetary processes; and iv) implement flood risk reduction interventions to improve rainwater management in flood-prone communities.

Project	Mano River Ecosystem Conservation and International Water Resources Management (IWRM) Project
Country	Regional (Liberia, Guinea, Sierra Leone and Ivory Coast)
Client	BRL engineering (BRLi)
Duration	2016
Description	C4 provided technical advisory services for the development of the Project Document for this GEF Trust Fund project. The project will: i) promote integrated management of forest ecosystems and improved natural resources management practices; and ii) facilitate high-level cooperation in the management of transboundary river basins.

Project	Adapting coastal zone management to climate change considering ecosystem and livelihoods
Country	Madagascar
Client	Ministry of Environment, Ecology, Sea and Forests, Government of Madagascar
Date	2015–2016
Description	C4 developed a Baseline Study for this project, which is funded by the GEF/LDCF. The project will reduce the vulnerability of Madagascar's coastal zone to climate variability and change, through institutional capacity building, coastal protection and integration of climate change into policy and planning. The Baseline Study included field-based assessments of land use and vegetation cover, as well as assessments of coastal infrastructure such as sea walls and groynes. Surveys were designed to collect social data at national, sub-national and local levels to measure vulnerability to climate change. The results of the assessments and surveys will be used to revise the original monitoring and evaluation plans, including indicators and targets.

Project	Climate change adaptation in the lowland ecosystems of Ethiopia
Country	Ethiopia
Client	UNDP
Date	2015
Description	C4 developed a Project Identification Form for this project funded by the GEF/LDCF. The project will: i) strengthen the technical capacity for implementing a diversified approach to climate change adaptation; ii) improve climate risk management practice in smallholder farmers by introducing climate information and decision-making tools; and iii) promote the adoption of climate change adaptation practices. In addition to supporting climate change adaptation, the project will promote sustainable economic growth in communities living in lowland ecosystems.

Project	Market Assessment: Revenue generating opportunities through tailored weather information products
Country	Benin, Burkina Faso, Ethiopia, The Gambia, Liberia, Malawi, Sao Tome and Principe, Sierra Leone, Tanzania, Uganda and Zambia
Client	UNDP



Date	2015–2016
Description	C4 undertook a continental-scale market assessment for the GEF/UNDP-funded project on Climate Information for Resilient Development in Africa (CIRDA). The objective is to assess the potential for developing tailored weather information products for revenue generation with a focus on 11 countries within the CIRDA programme. The assessment details the readiness of the national meteorological and hydrological services (NMHSs) in the CIRDA countries to pursue commercialisation of weather and climate services. Furthermore, the assessment identified potential pathways for such commercialisation and made recommendations for building the capacity of NMHSs to generate revenue through the development of weather and climate information services/products. See: http://www.undp-alm.org/projects/cirda

Project	Reliance Composting Project
Country	South Africa
Client	Reliance Compost
Date	2015–2018
Description	C4 is developing the Project Description Document to be validated under the Verified Carbon Standard (VCS). This project will i) allow Reliance Composting to generate Verified Carbon Units (VCUs) through the aerobic composting of garden and park waste; ii) reduce methane emissions by preventing the anaerobic decay of garden and park waste; and iii) promote the financial sustainability of Reliance Composting by enabling the sale of VCUs on the voluntary carbon market.

Project	Adapting to Climate Change in the Lake Victoria Basin
Country	Burundi, Kenya, Rwanda, Tanzania, Uganda
Client	UN Environment
Date	2015–2016
Description	C4 developed a Project Proposal for this AF-funded project. This project will: i) increase the institutional capacity in the five Lake Victoria Basin countries to integrate climate change considerations into transboundary water management; ii) establish and coordinate a basin-wide early warning system; and iii) implement on-the-ground interventions to enhance adaptive capacity at a regional level.

Project	Expanding the On-going Support to Least Developed Countries (LDCs) with country-driven processes to advance National Adaptation Plans (NAPs)
Country	LDCs
Client	UN Environment/UNDP
Date	2015–2016
Description	C4 developed a Project Document for this GEF/LDCF-funded project. This project will: i) expand the technical support provided by the ongoing NAP Global Support Programme; ii) further develop tools and methodologies that support important steps of the NAP process in LDCs; iii) organise an additional six targeted training workshops on key elements of the NAP process; and iv) further facilitate the exchange of knowledge and lessons learned – through South-South and North-South cooperation – to enhance the capacity for advancing the NAP process within LDCs.

Project	Preparation of South Sudan's National Adaptation Programme of Action in accordance to the Operational Guidelines for Expedited Funding
Country	South Sudan
Client	UN Environment
Date	2015
Description	C4 developed a National Adaptation Programme of Action (NAPA) for South Sudan. The NAPA outlines priorities for South Sudan to: i) increase capacities to adapt to climate change, thereby ensuring an enabling environment for the implementation of the UNFCCC; ii) provide direct channels to communicate information on urgent and immediate needs for adaptation; and iii) facilitate capacity building for the preparation of national communications and addressing urgent and immediate adaptation needs.



Project	Mainstreaming Climate Risk Considerations in Food Security and IWRM in Tsilima Plain and upper catchment areas.
Country	Eritrea
Client	UNDP
Date	2015
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) mainstream climate risk considerations into national policies and strategies; and iii) increase the resilience of the local communities to the effects of climate change through climate-smart ecosystem rehabilitation and management measures. See https://www.thegef.org/gef/project_detail?projID=6923

Project	Community-based, sustainable and integrated natural resource management in Sub-Zoba Nakfa, Northern Red Sea Region.
Country	Eritrea
Client	UNDP
Date	2015
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) mainstream sustainable land management, forestry and biodiversity conservation into land-use planning and agricultural production practices; and iii) increase the resilience of the local communities to the effects of climate change through climate-smart ecosystem rehabilitation and sustainable natural resource use and management measures.

Project	Strengthening the capacity of Sao Tomé's government to advance the National Adaptation Planning process
Country	Sao Tomé and Príncipe
Client	UN Environment
Date	2015–2016
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will enhance the capacity of the Sao Tomé's government to advance the National Adaptation Planning process. The interventions are likely to include: i) capacity building of the technical staff; ii) revision of the relevant national and sectoral policies, plans and strategies, iii) the establishment of a Long-Term Research Programme for the evaluation of all adaptation interventions to be implemented in Sao Tomé; and vi) the establishment of a monitoring and reviewing system for the NAP process.

Project	Adaptation to coastal erosion in vulnerable areas
Country	Senegal
Client	Centre for Ecological Monitoring
Date	2015
Description	C4 undertook the Terminal Evaluation for a project funded by the AF. The project objectives were to address the priority needs for adaptation to climate change as identified in the National Adaptation Programme of Action (NAPA) including the effects of sea level rise. The implementation sites of the project are Saly, Rufisque and Joal. The interventions of the project included the construction/rehabilitation of seawalls, anti-salt dikes and fish docks. Additionally, the project implemented interventions to improve communities' livelihoods by: i) training; ii) providing equipment for fish processing; and iii) increasing the productivity of agricultural land. The development of appropriate regulations to support adaptation to climate change in coastal areas was undertaken. The terminal evaluation included field-based assessments of the efficiency and sustainability of hard infrastructure and other activities implemented by the project. The results of the projects were compared with the initial objectives and targets defined at inception and mid-term. The study also included designing surveys which were undertaken to measure the projected benefits and those realised. The results of the assessments and surveys were used to produce



	lessons learned and improve the implementation of future projects by the government of Senegal and the AF.
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Project	Securing multiple ecosystem benefits through SLM in the productive but degraded landscapes of South Africa
Country	South Africa
Client	UNDP
Date	2015
Description	C4 developed a Project Document for this GEF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) mainstream sustainable land management practices into planning and financial frameworks; and iii) reduce land degradation and improve land productivity through climate-smart land/ecosystem rehabilitation measures. These measures will be implemented in the Karoo, Eastern Cape and the Olifants landscapes. See http://www.thegef.org/gef/project_detail?projID=5327

Project	Promoting climate-resilient, community-based regeneration of indigenous forests in Zambia's Central Province.
Country	Zambia
Client	UNDP
Date	2015
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen capacities for planning and implementation of climate-resilient forestry practices; ii) protect forest resources through implementation of fire management practice; and iii) reduce pressure on forest resources through the introduction of efficient charcoal kilns and the creation of alternative energy sources. See http://www.thegef.org/gef/project_detail?projID=5435

Project	Enhanced Management and Enforcement of Ethiopia's Protected Areas Estate
Country	Ethiopia
Client	UNDP
Date	2014–2015
Description	C4 developed a Project Identification Form for this project funded by the GEF Trust Fund. The project will: i) improve the capacity for strategic decision-making on biodiversity conservation; ii) demonstrate the adoption of a landscape approach to biodiversity conservation; and iii) strengthen national and local capacity for enforcement of protected areas including anti-poaching measures. The project will support the strengthening of legal and regulatory frameworks concerning biodiversity conservation. In addition, communities will be engaged to participate in decision-making and management of protected areas.

Project	Reducing the climate-change vulnerability of local communities in Burundi using EbA in degraded watersheds
Country	Burundi
Client	UN Environment
Date	2014–2015
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the adaptive capacity of local communities in Burundi to the effects of climate change. This will be achieved by: i) increasing the institutional and technical capacity of national and local governments to plan and implement EbA; ii) restoring degraded watersheds through on-the-ground EbA interventions; and iii) enhancing knowledge and undertaking research on EbA in the country. The EbA interventions will be focused on the Mumirwa mountains around Bujumbura.

Project	Niger Delta Climate Resilience Initiative
Country	Nigeria
Client	Private sector
Date	2014–2015



Description	C4 undertook a Pre-feasibility Assessment and developed a Project Identification Note for a REDD+ project in the Niger Delta. The project will focus on directing private sector investment to the restoration and conservation of mangroves and swamp forests to generate carbon credits. Restoration interventions will be complemented by alternative livelihood strategies to produce certified commodities that increase household income and/or food security. Lastly, the project will promote governance and additional donor investments in non-forest sectors to improve access to public services.
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Project	Community-based sustainable land and forest management in Afghanistan
Country	Afghanistan
Client	FAO
Date	2014–2015
Description	C4 developed a Project Identification Form for this project to be funded by the GEF Trust Fund. The project will: i) enhance capacity of national and sub-national government institutions for SLM/SFM planning; ii) enhance capacities of local communities in 6 provinces for developing and implementing community-based SLM/SFM plans; iii) improve management of 30,000 ha of forests to enhance biodiversity conservation and sequester carbon; iv) implement climate-resilient SLM practices across 200,000 ha of rangelands; and v) strengthen the knowledge base to inform planning and implementation of SLM/SFM.

Project	Natural Soil Infrastructure and Ecosystem Services Assessments
Country	South Africa
Client	Department of Environmental Affairs (DEA)
Date	2014–2018
Description	C4 undertook primary research, funded by the South African Government - Department of Environmental Affairs, investigating the relationship between soil properties and woody plant invasions – i.e. Invasive Alien Plants (IAPs) and bush encroachment – in the fynbos, grasslands and savanna biomes. In addition, C4 continues to be involved in a scientific technical advisory role to the ecological restoration projects within the Natural Resource Management Programme (NRMP) in thicket ecosystems. The objectives of the work are to: i) monitor and evaluate the effect of NRMP interventions on vegetation dynamics, soil erodibility, rates of soil erosion, soil water content and ecosystem carbon stocks; ii) to generate an income stream from verified carbon credits in subtropical thicket; and iii) build capacity of graduate students in the field of natural resource management and restoration ecology.

Project	Advancing the national adaptation planning process in Lao PDR
Country	Lao PDR
Client	UN Environment
Date	2015
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the institutional and technical capacity in Lao PDR to integrate climate change into policies, development plans and strategies at national and local levels. This will be achieved through: i) strengthening the capacity to advance the National Adaptation Plans (NAP) process at a national level and across 18 provinces of Lao PDR; ii) strengthening the system for developing, updating and sharing climate information; iii) mainstreaming NAP priorities into medium- and long- term development in the country; and iv) strengthening the capacity to monitor and review the NAP process in Lao PDR.

Project	Up-scaling solar energy applications for productive use in rural communities
Country	Yemen
Client	UNDP
Date	2015
Description	C4 developed a Project Identification Form for this project funded by the GEF/LDCF. The project will implement solar energy technologies in Taiz, Lahaj and Aden. These



	technologies will increase the availability of energy, thereby promoting security of livelihoods, food and water. In addition, by introducing solar technologies and increasing energy supply, there is opportunity to diversify rural livelihoods.
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Project	Increasing institutional and technical capacity for climate-resilient development in Djibouti in the Gobaad plains and Tadjourah city
Country	Djibouti
Client	UN Environment
Date	2015
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the adaptive capacity of local communities in the Gobaad plains and Tadjourah City. The interventions of the project include: i) increasing technical and institutional capacity to integrate climate change into development planning at national, regional and local levels; ii) promoting scientific research and access to information on climate change adaptation in Djibouti; and iii) implementing adaptation technologies including hard infrastructure and ecosystem-based adaptation in the Gobaad plains and Tadjourah City.

Project	Integrated Natural Resource
Country	Yemen
Client	UNDP
Date	2015
Description	C4 developed a Project Identification Form for this project funded by the GEF Trust Fund. The project will promote natural resource management by integrating biodiversity protection strategies and plans into sustainable ecosystem management practices. This will be achieved through strengthening legal and institutional capacities, enhancing coordination between agencies, and upscaling conservation agriculture.

Project	Assisting non-LDC developing countries with country-driven processes to advance National Adaptation Plans
Country	All non-LDCs
Client	UN Environment/UNDP
Date	2014–2015
Description	C4 developed a Project Document for this GEF/SCCF-funded project that will build technical and institutional capacity in non-LDC developing countries to integrate climate change adaptation into medium- to long-term planning processes. The strengthened capacity will promote: i) the inclusion of adaptation and mitigation priorities across a range of sectors in non-LDC developing countries; and ii) policy-making based on the most up-to-date information available. See: http://addis.UN Environment.org/projectdatabases/01247/project_general_info

Project	Reducing vulnerability from climate change in the foothills, lowlands and the lower Senqu river basin
Country	Lesotho
Client	UNDP
Date	2014–2015
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) mainstream climate risk considerations into national policies and strategies; and iii) increase the resilience of the local communities to the effects of climate change through climate-smart ecosystem rehabilitation and management measures. These interventions will take place in Lesotho's Foothills, Lowlands and the Lower Senqu River Basin. See http://www.thegef.org/gef/project_detail?projID=5075

Project	Building the resilience of local communities in Zambia through the introduction of Ecosystem-based Adaptation into priority ecosystems, including wetlands and forests
Country	Zambia



Client	UN Environment
Date	2014–2015
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the resilience of local communities to the effects of climate change. This increased resilience will be achieved through: i) increasing the institutional capacity of national and local government; ii) revising policies and strategies to mainstream climate risk considerations; iii) demonstrating Ecosystem-based Adaptation (EbA) interventions; and iv) integrating EbA and integrated environmental management into development planning. These EbA interventions will be focused on wetland and forest ecosystems in the Bangweulu Wetlands and surrounding areas.

Project	Addressing urgent coastal adaptation needs and capacity gaps in Angola
Country	Angola
Client	Government of Angola, UN Environment, UNDP
Date	2014–2015
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The objective of the project is to enhance institutional and community-level capacity to adapt to climate change along the coast of Angola. This objective will be carried out through: i) enhancing the national early warning system; ii) restoring coastal ecosystems and demonstrating adaptation measures to local communities; and iii) enhancing institutional coordination for proactive adaptation in Angola.

Project	Building climate resilience to reduce vulnerability in Wadis and coastal areas
Country	Yemen
Client	UNDP
Date	2014
Description	C4 developed a Project Identification Form for this LDCF-funded project. The project will reduce vulnerability to climate change through increased community level resilience in degraded wadis and coastal areas.

Project	Building capacity for LDCs to participate effectively in intergovernmental climate change processes
Country	LDCs
Client	UN Environment/UNDP
Date	2014
Description	C4 developed the Project Identification Form and Project Document for this GEF/LDCF-funded project global support programme. The project activities will strengthen institutional and technical capacities in least developed countries for more effective participation in intergovernmental climate change negotiations and coordination of climate change efforts. See http://www.thegef.org/gef/project_detail?projID=5615

Project	Building the resilience of Kune-Vaini Lagoon through ecosystem-based adaptation (EbA)
Country	Albania
Client	UN Environment
Date	2014
Description	C4 developed a Project Document for this SCCF-funded project. The project will increase the resilience of the Kune-Vaini Lagoon system and communities living nearby it through EbA measures such as dune stabilisation and riparian forest restoration. See http://www.thegef.org/gef/project_detail?projID=5386

Project	'Developing core capacity to address adaptation to climate Change in productive coastal zones of Tanzania (Least Developed Countries Fund)' & 'Implementation of Concrete Adaptation Measures to reduce vulnerability of livelihoods and economy of coastal communities in Tanzania (Adaptation Fund)'
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Country	Tanzania
Client	Tanzanian Vice-President's Office
Date	2014
Description	C4 undertook a combined Baseline Study for these two complementary projects funded by the AF and UN Environment/LDCF, respectively. The projects will enhance the adaptive capacity of local government and communities living in coastal zones to adapt to sea-level rise and erratic rainfall. Both projects include restoration of coastal infrastructure and ecosystems. The Baseline Study includes field-based assessments of land use and vegetation cover, as well as assessments of coastal infrastructure such as sea walls, groynes and dikes. The study also includes designing surveys to be conducted among local communities to measure climate change awareness. The results of the assessments and surveys will be used to revise the original monitoring and evaluation plans, including project baselines, indicators and targets.

Project	Enhancing climate change resilience of vulnerable communities living in Mozambique's coastal zones
Country	Mozambique
Client	UN Environment
Date	2014
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will: i) strengthen the institutional and technical capacity of municipal and district authorities to plan and implement EbA interventions in urban and peri-urban areas; ii) implement on-the-ground EbA interventions; and iii) share best practice knowledge and increase public awareness on EbA interventions. These EbA interventions will be focused on mangrove and riparian ecosystems.

Project	Feasibility of sustainable livestock production in the Eastern Cape, South Africa as part of the Sustainable Land and Water Programme
Country	South Africa
Client	IDH (Instituut voor Duurzame Handel), The Netherlands
Date	2014
Description	C4 developed a Feasibility Study on the upscaling of two models for sustainable livestock management in two water catchments in the Eastern Cape, South Africa. These models will: i) improve livestock production; ii) improve market access for communal farmers; iii) improve livelihoods for communal farmers; and iv) rehabilitate degraded grasslands. See http://www.idhsustainabletrade.com/sustainable-land-and-water-program

Project	Building the capacity of Rwanda's government to advance the National Adaptation Planning process
Country	Rwanda
Client	UN Environment
Date	2014
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project which will support the implementation of the NAP process in Rwanda. The project will include: i) capacity building; ii) fundraising; iii) monitoring and reporting on Rwanda's experience regarding medium- and long-term adaptation; and iv) sharing knowledge on the NAP process nationally and internationally. The implementation of medium- and long-term interventions for adaptation to climate change – such as ecosystem based adaptation interventions – in the country will also be promoted by the project.

Project	Ecosystem-based Adaptation for climate-resilient development in the Kathmandu Valley, Nepal
Country	Nepal
Client	UN Environment
Date	2014
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the climate-resilience of vulnerable communities living in the



	Kathmandu Valley. This will be achieved using EbA through: i) mainstreaming EbA into development planning; ii) enhancing knowledge and awareness of local communities living in the Kathmandu Valley on EbA; and iii) strengthening the capacity of local communities living in the Kathmandu Valley to implement EbA interventions that promote water conservation, soil stability and livelihood diversification.
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Project	Ecosystem-based Adaptation in the Great Mekong Sub-region (GMS-EbA)
Country	China, Vietnam, Cambodia, Laos, Myanmar, Thailand (Greater Mekong River Basin)
Client	UN Environment
Date	2014
Description	C4 developed a Project Identification Form for this GEF/SCCF-funded project. The project will increase the resilience of local communities to the effects of climate change. This will be achieved by increasing the institutional capacity of the national and local governments throughout the GMRB, implementing pilot EbA interventions and integrating EbA into region-wide planning.

Project	Reducing the climate change vulnerability of local communities in Uganda through EbA in forest and wetland ecosystems
Country	Uganda
Client	UN Environment
Date	2014
Description	C4 developed a Project Identification Form for this GEF/LDCF-funded project. The project will increase the resilience of local communities in Uganda living around forests and wetlands to climate change using an ecosystem-based adaptation approach. Tailored, climate-resilient restoration of degraded forests and wetlands will take place in selected project sites. These restoration interventions will be complemented by the development of alternative livelihood strategies in communities living adjacent to the project sites.

Project	Implementing adaptation technologies in fragile ecosystems of Djibouti's central plains
Country	Djibouti
Client	UN Environment
Date	2013–2014
Description	C4 developed a Project Document for this GEF/LDCF-funded project project and provides ongoing technical advice as Chief Technical Advisor. Through the project, knowledge on – and technical capacity for – adaptation to climate change will be increased to enable government staff to implement, maintain and upscale best practices for adaptation in Djibouti. The project intervention will decrease the vulnerability of local communities to floods and droughts through the construction of hard infrastructure, implementation of ecosystem-based adaptation interventions and promotion of climate-resilient livelihoods. See http://www.thegef.org/gef/project_detail?projID=5021

Project	Strengthening community resilience to climate-induced natural disasters in the Dili to Ainaro Road Development Corridor
Country	Timor-Leste
Client	UNDP
Date	2013–2014
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will revise policies, strengthen local disaster risk management institutions and invest in risk reduction interventions within the Dili to Ainaro Development Corridor. These interventions will protect important economic infrastructure from climate-induced natural hazards. See http://www.thegef.org/gef/project_detail?projID=5056

Project	Catalysing ecosystem restoration for resilient natural capital and rural livelihoods in degraded forests and rangelands of Nepal
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Country	Nepal
Client	UN Environment
Date	2013–2014
Description	C4 developed a Project Identification Form and is developing a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) revise policies and strategies that promote the restoration of forests and rangelands; and iii) increase the resilience of local communities to the effects of climate change through the restoration of forest and rangeland ecosystems. See http://www.thegef.org/gef/project_detail?projID=5203

Project	Western Cape Ecosystems Goods & Services Valuation and Investment Portfolio (WC Eco-Invest Project)
Country	South Africa
Client	Western Cape Government
Date	2013–2014
Description	C4, in partnership with Anchor Environmental, identified private sector business opportunities in restoration/conservation of ecosystems in the Western Cape. Appropriate financing mechanisms and public-sector activities were described for catalysing such investments. The project is part of the Western Cape Green Economy Strategy Framework, <i>Green is Smart</i> . This framework includes Smart Ecosystems as one of its five focal areas. The Smart Ecosystems focal area seeks to facilitate strategic investments in the protection, restoration and management of ecosystems.

Project	Economy-wide integration of climate change adaptation and disaster risk management/disaster risk reduction to reduce climate vulnerability of communities in Samoa
Country	Samoa
Client	UNDP
Date	2013–2014
Description	C4 developed a Project Document for this GEF/SCCF-funded project. The project will establish an economy-wide approach to climate change adaptation in Samoa to promote the efficient integration of adaptation and DRR/DRM into national development planning. This will enhance the resilience of local communities across Samoa to climate change and natural disasters. See http://www.thegef.org/gef/project_detail?projID=5417

Project	Building climate resilience through innovative financing mechanisms for climate change adaptation
Country	Antigua and Barbuda
Client	UN Environment
Date	2013–2015
Description	C4 developed a Project Identification Form and a Project Document for this GEF/SCCF-funded project. The project focuses on innovative financing mechanisms for implementing EbA interventions. These will strengthen resilience in vulnerable communities in Antigua and Barbuda. The project will entail building capacity of relevant institutions and communities to plan and implement the financing mechanisms and EbA interventions. See http://www.thegef.org/gef/project_detail?projID=5523

Project	Building climate resilience of urban systems through ecosystem-based adaptation in Latin America and the Caribbean
Country	El Salvador, Jamaica and Mexico
Client	UN Environment
Date	2013–2015
Description	C4 developed a Project Identification Form and a Project Document for this GEF/LDCF-funded project. The project will increase the climate-resilience of vulnerable communities living in three medium-sized cities across Latin American and Caribbean. This will be achieved by: i) mainstreaming EbA into urban development



	planning; ii) implementing on-the-ground urban EbA interventions; and iii) increasing knowledge and awareness of urban EbA throughout the region. See http://www.thegef.org/gef/project_detail?projID=5681
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Project	Ecosystem-based approaches to Adaptation (EbA) in the drought-prone Barind Tract and Haor "wetland" Area
Country	Bangladesh
Client	UN Environment
Date	2013–2015
Description	C4 developed a Project Identification Form and is developing a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical and institutional capacity of local and national government to plan, implement and upscale EbA; ii) promote the mainstreaming of climate risks and EbA into national policies and strategies; and iii) increase the capacity of local communities to adapt to the adverse effects of climate change through the implementation of EbA, support measures for EbA and additional livelihoods. These interventions will take place in drylands in the Barind Tract and wetlands in the Haor area of Bangladesh. See http://www.thegef.org/gef/project_detail?projID=5456

Project	Development of an improved and innovative delivery system for climate resilient livelihoods in Mauritania
Country	Mauritania
Client	UN Environment
Date	2013–2015
Description	C4 developed a Project Identification Form and is developing a Project Document for this GEF/LDCF-funded project. The project will contribute to: i) coordinating a national response to climate change; ii) promoting drought-resilient livelihoods in collaboration with local communities' associations for the management of natural resources; iii) increasing knowledge on best practices for adaptation; and iv) raising awareness on adaptation opportunities. See: http://www.thegef.org/gef/project_detail?projID=5580

Project	Integrated water harvesting technologies to adapt to climate change-induced water shortage
Country	Yemen
Client	UNDP
Date	2013–2015
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of government institutions; ii) rehabilitate and re-introduce traditional water harvesting methods as well as introducing modern ones; and iii) improve decentralised water management to adapt to water shortages caused by climate change and groundwater depletion. These interventions will take place in rural and urban locations and will also provide both domestic and irrigation water. See http://www.thegef.org/gef/project_detail?projID=5211

Project	Kuzuko Lodge Private Game Reserve Thicket Restoration Project
Country	South Africa
Client	Kuzuko Lodge Private Game Reserve
Date	Ongoing since 2013
Description	C4 developed the project and facilitated its validation under the Verified Carbon Standard (VCS) and Climate, Community and Biodiversity Alliance (CCBA). The project, which received CCBA Gold status, will undertake ecosystem restoration in the Kuzuko Lodge Private Game Reserve in the Eastern Cape of South Africa. Degraded thicket ecosystems will be restored by planting cuttings of the indigenous thicket tree, <i>Portulacaria afra</i> , commonly known as spekboom. The restoration process sequesters large quantities of atmospheric carbon into soils and plants. Sales from carbon credits will fund the restoration process. See www.kuzukoproject.co.za



Project	Addo Elephant National Park, Baviaanskloof Nature Reserve and Great Fish River Nature Reserve Restoration Project (ABFRP)
Country	South Africa
Client	South African Government
Date	Ongoing since 2013
Description	Anthony Mills has been involved in the ABFRP as a scientific advisor since the start of the project in 2003. C4 has contributed to the project by developing the project documentation, restoration protocols and Standard Operating Procedures, and continues to be involved in a technical advisory capacity. This project is the first validated Verified Carbon Standard (VCS) project under the 2007.1 standard in Africa to restore indigenous forest/thicket in a semi-desert, and only the 19th Agriculture, Forestry and Land-Use project to be validated worldwide. At least 5,300 ha of degraded thicket will be restored by planting cuttings of the indigenous thicket tree <i>Portulacaria afra</i> (spekboom).

Project	Adapting community forestry landscapes and associated community livelihoods to a changing climate, in particular an increase in the frequency and intensity of extreme weather events
Country	Myanmar
Client	UN Environment
Date	2012–2015
Description	C4 developed a Project Identification Form and Project Document for this GEF/LDCF-funded project. The project will: i) strengthen the technical capacity of local and national institutions; ii) increase the resilience of local communities to the effects of climate change through EbA (implemented under the Community Forestry Instruction); iii) strengthen EWS for preparedness, early warning and response to protect Community Forestry landscapes and associated local community livelihoods from extreme weather events; and iv) revise policies and strategies that promote EbA in forests. See http://www.thegef.org/gef/project_detail?projID=5567

Project	Building adaptive capacity and resilience to climate change in Afghanistan
Country	Afghanistan
Client	UN Environment
Date	2011–2014
Description	C4 developed a Project Identification Form and a Project Document for this GEF/LDCF-funded project. Technical advice was also provided, with C4 staff fulfilling the role of Chief Technical Advisor. The objective of the project is to increase the climate-resilience of rural populations and strengthen Afghanistan's capacity to both plan for and respond to the short- and long-term effects of climate change. The project uses global best practices in ecosystem management to sustain supplies of ecosystem goods and services despite climate change. See http://www.thegef.org/gef/project_detail?projID=4227

Project	Strengthening Management Effectiveness and Generating Multiple Environmental Benefits within and around Protected Areas in Zambia
Country	Zambia
Client	UNDP
Date	2011–2012
Description	C4 developed two Technical Reports for this GEF-funded multi-focal area project in Zambia, namely: i) one stocktaking report to assess feasibility of REDD+ in Game Management Areas around Kafue National Park; and ii) one stocktaking report to estimate potential GHG reductions through promotion of woodlots and efficient charcoal kilns in Game Management Areas around Zambian Protected Areas.

Project	Improvement of early warning systems to reduce impacts of climate change and capacity building to integrate climate change into development plans
Country	Lesotho



Client	UN Environment
Date	On-going since 2012
Description	C4 undertook a Baseline Study and provided ongoing technical advice as Chief Technical Advisor in support of this GEF/LDCF-funded project. The project is developing best practice guidelines for climate-resilient agriculture, and mainstreaming climate change interventions into relevant sectoral policies. The objectives of the project are to: i) build the capacity for monitoring and predicting climate change effects; ii) deliver early warning for extreme events; and iii) improve local and national planning for adaptation to climate change throughout the country. See http://www.thegef.org/gef/project_detail?projID=3841

Project	Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable developing countries
Country	Mauritania, Nepal, Seychelles, China
Client	UN Environment
Date	On-going since 2012
Description	C4 developed a Project Identification Form and Project Document for this GEF/SCCF-funded project as well as conducted baseline studies for the project in Mauritania, Nepal, and Seychelles. The project will build climate resilience using EbA in LDC and Small Island Developing States of the Asia-Pacific region and Africa. It will achieve this by increasing institutional capacity, mobilising knowledge, and transferring appropriate technologies on climate change adaptation to Mauritania, Nepal and Seychelles. Best-practice EbA technologies will be transferred from China to the pilot countries and as such this represents China's first major adaptation project. C4 provides ongoing technical advice as Chief Technical Advisor to this project. Tasks completed by C4 in this regard have included: i) facilitating the project launch workshop; ii) developing work plans for each pilot country; ii) coordinating EbA and Regional Network workshops; and iv) developing terms of reference for project consultants. See http://www.thegef.org/gef/project_detail?projID=4934

Project	Pilot Program for Climate Resilience
Country	Niger, Mozambique, Zambia
Client	IFC
Date	On-going since 2011
Description	Anthony Mills has led the development of this \$100 million programme of private sector investments for the International Finance Corporation (IFC). The investments, which build climate resilience for local communities, span a range of sectors including: agriculture, mobile phone technology, sustainable forestry, REDD+, and weather index-based insurance. See https://www.climateinvestmentfunds.org/cif/node/4

Project	Catalysing ecosystem-based adaptation (EbA) for resilient ecosystems and rural livelihoods in degraded forests, savannas and wetlands of Rwanda
Country	Rwanda
Client	UN Environment
Date	2011–2014
Description	C4 developed the Project Identification Form and Project Document for this GEF/LDCF-funded project. The project reduces the vulnerability of rural communities to climate change by enhancing the capacity of national and local institutions to implement EbA activities. These activities will restore degraded ecosystems and establish climate resilient ecosystems in the wetlands, forest, savannas and mountains of Rwanda. See http://www.thegef.org/gef/project_detail?projID=5194

Project	Enhancing climate change resilience of rural communities living in protected areas of Cambodia
Country	Cambodia
Client	UN Environment



Date	2011–2014
Description	C4 developed the Project Note and Project Document, undertook the Baseline Study and provides ongoing technical advice as Chief Technical Advisor in support for this AF-funded project. The project will enhance the resilience of rural communities living in Protected Areas using the “ecoagriculture” concept by: i) restoring degraded tropical forests over thousands of hectares; and ii) practising intensive conservation agriculture in and around homegardens. See https://www.adaptationfund.org/sites/default/files/Cambodia%20AF_FPP_23%20May%2023%20clean%20copy.pdf

Project	Implementing NAPA priority interventions to build resilience in the most vulnerable coastal zones in Djibouti
Country	Djibouti
Client	UN Environment
Date	2010–2014
Description	C4 developed the Project Document, undertook a Baseline Study, and provides ongoing technical advice as Chief Technical Advisor in support for this GEF/LDCF-funded project. The project will address the effects of climate change on coastal ecosystems and local communities by restoring mangroves. It will also implement climate-resilient agricultural systems in Obock-Khor Angar in the North and Altar-Damerjog in the South. See http://www.thegef.org/gef/project_detail?projID=3408

Project	Additional financing to Community-Based Agricultural and Rural Development Programme
Country	Nigeria
Client	IFAD
Date	2013
Description	Anthony Mills was contracted as an external reviewer for this project. The review focused on climate change adaptation and natural resource management interventions under the Adaptation for Smallholder Agriculture Programme, for this International Fund for Agricultural Development (IFAD)-funded project.

Project	Ghana Rural Growth Programme
Country	Ghana
Client	IFAD
Date	2013
Description	C4 developed the climate change adaptation interventions for the Ghana Rural Growth Programme, under the Adaptation for Smallholder Agriculture Programme, for this International Fund for Agricultural Development (IFAD)-funded project. This included designing and costing project interventions that will build climate resilience within agriculture in rural areas. Project components include: i) climate change awareness; ii) infrastructure investment; iii) agro-ecological adaptation; and iv) policy dialogue and capacity building. See http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/GH-2007-117-EN-ADF-BD-WP-GHANA-AR-NORTHERN-RUAL-GROWTH-PROGRAMME.PDF

Project	Pre-baseline feasibility assessment for a REDD+ project in Sierra Leone
Country	Sierra Leone
Client	UK-based private sector client
Date	2013
Description	C4 undertook a Feasibility Assessment in support of a proposed REDD+ project for a UK-based private sector client. This included extensive literature reviews, remote consultations with local stakeholders and analysis of satellite imagery to determine historical rates of deforestation and degradation.

Project	Spier mob-grazing carbon audit
Country	South Africa



Client	Credible Carbon
Date	2013
Description	C4 undertook an audit of greenhouse gas emissions on a privately-owned farm practising improved land management techniques. The audit was undertaken in support of the project documentation for an independent carbon credit certification scheme.

Project	Building the capacity of the Government of Vanuatu to advance the National Adaptation Planning process
Country	Vanuatu
Client	UN Environment
Date	2015–2016
Description	C4 developed a Project Identification Form for this project funded by the GEF/LDCF-funded project. The project will: i) government agencies to undertake medium- to long-term adaptation planning; ii) strengthen the capacity of government agencies to undertake climate risk, vulnerability and impact assessments; and iii) operationalise a financing mechanism for sustainable funding of adaptation interventions in the medium to long term local communities to access financing for coastal adaptation interventions.

Project	Coastal protection for vulnerable island communities in Tuvalu
Country	Tuvalu
Client	UN Environment
Date	2015–2016
Description	C4 developed a Project Identification Form for this project funded by the GEF/LDCF-funded project. The project will: i) strengthen the capacity of government agencies to plan and implement coastal adaptation interventions; ii) strengthen the capacity of local communities to access financing for coastal adaptation interventions; and iii) reduce vulnerability to climate-induced natural disasters through implementation of a mix of hard and soft coastal adaptation interventions.

Project	Building climate resilience of urban systems through ecosystem-based adaptation (EbA) in the Asia-Pacific region
Country	Bhutan, Cambodia, Laos, Myanmar
Client	UN Environment
Date	2013
Description	C4 developed a Project Identification Form and the full Project Document for this GEF/LDCF-funded project which will implement urban EbA interventions in several cities in the Asia-Pacific region. These interventions, including urban reforestation, urban agriculture and wetland restoration will increase the climate-resilience of poor urban communities. Potential pilot cities include: Thimphu (Bhutan), Siem Reap and Kampot (Cambodia), Muang Xay and Paksan (Laos), and Mandalay and Naypyidaw (Myanmar). See http://www.thegef.org/gef/project_detail?projID=5815

Project	Assisting Least Developed Countries (LDCs) with country-driven processes to advance National Adaptation Plans
Country	All LDCs
Client	UN Environment/UNDP
Date	2013
Description	C4 developed a Project Document for this GEF/LDCF-funded project that will build capacity in all LDCs for integrating climate change adaptation into medium- to long-term planning processes. The strengthened capacity will promote: i) the inclusion of adaptation and mitigation priorities across a range of sectors (e.g. water, agriculture) in planning activities; and ii) policy-making based on the most up-to-date information available. See http://www.thegef.org/gef/project_detail?projID=5320



Project	Strengthening climate information and early warning systems (EWSs) in Africa for climate resilient development and adaptation to climate change
Countries	Zambia, Liberia, Uganda, Malawi
Client	UNDP
Date	2012-2013
Description	C4 developed four Project Documents for this GEF/LDCF-funded projects. Project interventions will: i) enhance the capacity of project countries to monitor and forecast climate and weather; ii) generate tailored climate information for specific sectors; and iii) disseminate early warnings for climate hazards specific to each country. These projects include investments in training, equipment and infrastructure. See http://www.thegef.org/gef/content/strengthening-climate-information-and-early-warning-systems-eastern-and-southern-africa-cl-0

Project	Building a comprehensive national approach in Rwanda
Country	Rwanda
Client	UN Environment/UNDP
Date	2012
Description	C4 undertook a Baseline Study for this GEF/LDCF-funded project and African Adaption Programme project. This involved conducting vulnerability assessments of rural communities during a three-week mission to revise the original project indicators. Furthermore, a vulnerability index was developed to assist in monitoring and evaluating the indicators.

Project	Reducing vulnerability to climate change by establishing early warning and disaster preparedness systems and support for integrated watershed management in flood prone areas
Country	Rwanda
Client	UN Environment/UNDP
Date	2012
Description	C4 undertook a Baseline Study for this GEF/LDCF-funded project. The project will strengthen national and local capacities to deliver functional early warning and disaster preparedness systems. This will promote early warning of vulnerable populations in the Gishwati forest and Congo-Nile watershed and thereby enable the development of agricultural planning at the household level. See http://www.thegef.org/gef/project_detail?projID=3838

Project	National Adaptation Programme of Action (NAPA) to climate change – Myanmar
Country	Myanmar
Client	UN Environment
Date	2012
Description	C4 developed a National Adaptation Programme of Action (NAPA) for Myanmar in this GEF/LDCF-funded project. The work entailed assessing climate vulnerability and developing appropriate adaptation interventions. Eight sectors were covered namely: i) early warning systems (EWS); ii) public health; iii) agriculture; iv) water resources; v) energy, transport and industry; vi) coastal zone; vii) forestry; and viii) biodiversity. See http://unfccc.int/resource/docs/napa/mmr01.pdf

Project	Development of integrated MRV systems for REDD+ in the SADC region
Countries	SADC countries
Client	GIZ
Date	2012–2013
Description	C4 undertook an in-depth study on current capacity and capacity needs for measurement, reporting and verification of deforestation and forest degradation across the SADC region. Extensive consultations with multiple stakeholders were held, including in-country consultations in the Democratic Republic of Congo, Namibia, Swaziland, Tanzania and Zimbabwe. See https://www.giz.de/en/worldwide/15908.html

Project	Carbon stocks under different land-uses in renosterveld
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Country	South Africa
Client	Table Mountain Fund
Date	2011–2013
Description	C4 conducted scientific research to quantify carbon storage in plants and soils in renosterveld vegetation, a highly threatened indigenous vegetation type in the southern Cape, South Africa. The research included assessing the commercial viability of using carbon finance to restore renosterveld in cultivated lands to create conservation corridors between fragments of intact renosterveld. A scientific paper entitled “Sequestering carbon and restoring renosterveld through following: a practical conservation approach for the Overberg, Cape Floristic Region, South Africa” was published in <i>Conservation Letters</i> in 2013.

Project	Understanding the socio-economic impacts of climate change and the development of a climate proofing strategy in the Limpopo River Basin
Country	Mozambique
Client	Mozambican Government
Date	2011–2012
Description	C4 developed a Project Document for incorporating climate change into the MICOA development plans of local government authorities in the Limpopo River Basin. The project objectives were to build climate resilience and reduce the disaster risk of local communities. In particular, this project used downscaled models to generate 840 years of daily simulations, which were then run through hydrological and agricultural models. The results were combined with indicators of socio-economic vulnerability to identify ‘hotspots’ where climate-related hazards are most likely to affect local communities.

Project	Arab Climate Resilience Initiative
Countries	Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, the Occupied Palestinian Territory, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, Yemen
Client	UNDP
Date	2011
Description	C4 developed the Project Document for this project. The project objective is to establish the foundations of a regional platform to provide support for climate change resilience in countries of the Arab region. Project activities include: i) enhancing institutional capacity to address the effects of climate change; ii) strengthening resilience to the negative effects of climate change and creating opportunities to enhance the production and use of sustainable energy; and iii) advocating for and creating public awareness in countries of the Arab region regarding climate change adaptation and mitigation.

Project	Implementing NAPA priority interventions to strengthen the climate change early warning systems in The Gambia
Country	The Gambia
Client	UN Environment
Date	2011
Description	C4 undertook a Baseline Study for this GEF/LDCF-funded project. The study included designing surveys that were then conducted among local communities to develop a vulnerability index. This index was used to revise the original monitoring and evaluation plan, including project baselines, indicators and targets. The project is reducing climate change vulnerability and enhancing adaptive capacity by strengthening early warning and information sharing systems in The Gambia. See http://www.thegef.org/gef/project_detail?projID=5071

Project	Building Turkey's resilience to climate change through ecosystem-based adaptation (EbA)
Country	Turkey
Client	UN Environment
Date	2011



Description	C4 developed a Project Document for this EbA project. The project's objective is to increase the supply of ecosystem goods and services within the Anatolian steppes, Mediterranean forests, the Cukurova coastal zone, and the south-eastern GAP region. This will reduce the vulnerability of communities and economic sectors to climate change.
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Project	Early warning and advisory climate service and product: a diagnostic review and needs assessment for Sub-Saharan Africa – Zambia
Country	Zambia
Client	BRLi
Date	2011
Description	C4 conducted a needs assessment and review of early warning systems (EWSs) against climate risks for this African Centre of Meteorological Application for Development (ACMAD)-funded project. The needs for EWSs and advisory services were identified within four themes: i) agriculture and food security; ii) water; iii) health; and iv) severe weather events. The findings and recommendations of the study were inputs into the 'African Early Warning and Advisory Climate Services' (AEWACS) project.

Project	Technical feasibility assessment of the Territorial Approach to Climate Change (TACC) project for the Mbale region of Uganda
Country	Uganda
Client	UNDP
Date	2011
Description	C4 undertook a technical assessment prior to implementation of this project. The project focuses on mitigation and adaptation in three districts in eastern Uganda. The technical feasibility of several proposed activities was examined, including: i) support for Forests Absorbing Carbon Emission (FACE) programme; ii) upland afforestation; iii) coffee agroforestry; iv) improved combustion stove distribution; v) a small grants scheme; and vi) rainwater harvesting. See http://open.undp.org/#project/00060230

Project	Early warning and advisory climate services and products: a diagnostic review and needs assessment for Sub-Saharan Africa – South Africa
Country	South Africa
Client	BRLi
Date	2011
Description	C4 conducted a needs assessment and review of early warning systems (EWSs) against climate risks for this African Centre of Meteorological Application for Development (ACMAD)-funded project. The needs for EWSs and advisory services were identified within four themes: i) agriculture and food security; ii) water; iii) health; and iv) severe weather events. The findings and recommendations of the study were used to inform the 'African Early Warning and Advisory Climate Services' (AEWACS) project.

Project	Improved Cooking Stove programme (ICS) – Reports on the Non-Renewable Biomass fraction (fnrb)
Country	Ethiopia, Ghana, India, Kenya, Malawi, Rwanda, South Africa, Tanzania, Uganda, Sierra Leone, Zambia, Nigeria, Madagascar, Senegal, Zimbabwe, Swaziland, Namibia
Client	Cquest, ICECAP and co2balance
Date	2010-2013
Description	C4 developed a series of technical reports entitled 'Improved Cooking Stove programme: Calculating the Non-Renewable Biomass fraction (fnrb)'. These reports contributed to the development of small-scale, Clean Development Mechanism projects. These projects will reduce fuelwood consumption in more than 15 African and Asian countries by distributing improved cooking stoves to households that use fuelwood as a primary energy source.



Project	Carbon credit earning potential for REDD+ activities in the Sichifulo and Lupande Game Management Area, Zambia
Country	Zambia
Client	African Carbon Exchange
Date	2008–2011
Description	C4 assessed the financial and ecological viability of a range of a proposed REDD+ project in Zambia. The project focused on whether greenhouse gas (GHG) emission reductions are obtainable from forest protection in the project areas. This included preparing a detailed Project Idea Note and undertaking carbon stock assessments of the project areas.

Project	Tree planting in South African townships
Country	South Africa
Client	Food & Trees for Africa
Date	2010–2011
Description	C4 developed a Project Documentation for this project, which was validated through the Verified Carbon Standard (VCS) in September 2011 under the 2007.1 standard. This and the “Peri-urban bamboo planting around South African townships” project were the first urban greening projects in Africa to be validated by the VCS. The project will generate carbon credits (Verified Emission Reductions, VERs) by planting trees in townships where communities do not have the financial resources available to do this.

Project	Peri-urban bamboo planting around South African townships
Country	South Africa
Client	Food & Trees for Africa
Date	2010–2011
Description	C4 developed the Project Documentation for the project, which was validated through the Verified Carbon Standard (VCS) in September 2011 under the 2007.1 standard. This and the ‘Tree Planting in South African Townships’ project were the first urban greening projects in Africa to be validated by the VCS. The project involves establishing a bamboo plantation on the outskirts of selected townships. A community harvesting programme was designed, whereby mature bamboo culms are harvested annually after the third year. The harvested culms will be used by the community to manufacture home-made items for sale in small-scale businesses. See http://mer.markit.com/br-reg/public/project.jsp?project_id=10000000000851

Project	Carbon credit earning potential for REDD+ activities in NG8 and the NG26 Wildlife Management Area, Botswana
Country	Botswana
Client	African Carbon Exchange
Date	2008–2011
Description	C4 assessed the financial and ecological viability of a proposed REDD+ project in northern Botswana. The project focused on whether greenhouse gas (GHG) emission reductions are obtainable from forest protection in the project areas. This included preparing a detailed Project Idea Note (PIN) and undertaking carbon stock assessments of the project areas.

Project	Vulnerability assessment and adaptation programme for climate change within the coastal zone of Cambodia considering livelihood improvement and ecosystems
Country	Cambodia
Client	UN Environment
Date	2010
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project is strengthening the climate resilience of coastal communities by protecting and rehabilitating coastal ecosystems. The project interventions include restoring mangroves and enhancing the sustainable use of natural resources.



	See http://www.thegef.org/gef/project_detail?projID=3890
Project	Adapting water resource management in the Comoros to expected climate change
Country	Comoros
Client	UNDP/UN Environment
Date	2010
Description	C4 developed a Project Document for this Global Environment Facility/Least Developed Countries Fund-funded project. The objective of the project is to improve water resource management – including increased water supply and improved water quality – to reduce the risk of climate change effects on lives and livelihoods. Furthermore, the project will pilot reforestation activities to improve water basin management and prevent soil erosion. See http://www.thegef.org/gef/project_detail?projID=3857
Project	Adapting national and transboundary water resource management in Swaziland to manage the expected impacts of climate change
Country	Swaziland
Client	UNDP
Date	2010
Description	C4 developed a Project Document for this GEF/SCCF-funded project that used an ecosystem-based approach to manage Swaziland's water resources given the anticipated effects of climate change. The project promoted national dialogue between multiple stakeholders from a range of sectors, primarily agriculture and water management. See http://www.thegef.org/gef/project_detail?projID=4255
Project	Long-term planning for low emission, climate-resilient development in the Delta State, Nigeria
Country	Nigeria
Client	UNDP
Date	2010
Description	C4 developed a Project Document for this UNDP and the Government of Nigeria project. The project will build technical capacity within government and the private sector to implement appropriate mitigation and adaptation interventions. These interventions will include <i>inter alia</i> : i) cross-sectoral studies on the nexus between environmental degradation and climate change impacts; ii) identification of communities in Delta State most vulnerable to climate change; and iii) identification of appropriate GHG mitigation and adaptation options. In addition, a Territorial Approach to Climate Change (TACC) will be undertaken to facilitate Low Emission Climate-Resilient Development (LECRD), and address both mitigation and adaptation problems.
Project	UN collaborative programme on reducing emissions from deforestation and forest degradation in developing countries
Country	Zambia
Client	UNDP, UN Environment, FAO
Date	2010
Description	C4 developed a Project Document for this UN-REDD project. The project prepared Zambian institutions and stakeholders for effective nationwide implementation of the REDD+ mechanism. The objectives of the project include: i) building an institutional and stakeholder capacity to implement REDD+; ii) developing policies for REDD+; iii) developing REDD+ benefit-sharing models; and iv) developing measurement, reporting and verification (MRV) systems for REDD+.
Project	Climate change adaptation in the Quirimbas National Park
Country	Mozambique
Client	BRLi
Date	2010



Description	C4 developed a Project Document for this French Global Environment Facility-funded project. The project focused on conservation under climate change conditions in marine and terrestrial ecosystems, particularly coral reefs, seagrass meadows, mangrove forests and Miombo woodlands. This included: i) studies on the effects of climate change on coral reefs and mangrove in Northern Mozambique; ii) adaptation strategies to address these effects; iii) coastal management for adaptation to climate change in marine and terrestrial areas; and iv) revenues from conservation i.e. Payments for Ecosystem Services (PES).
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Project	Implementing NAPA priority interventions to build resilience and adaptive capacity of the agriculture sector to climate change in Niger
Country	Niger
Client	UNDP
Date	2009
Description	C4 developed a Project Document for this GEF/LDCF-funded project that has increased the adaptive capacity of the agriculture and water sectors. The interventions increased agricultural productivity, food security and water availability. See http://www.thegef.org/gef/project_detail?projID=3916

Project	Central Asian multi-country programme in climate risk management
Country	Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan
Client	UNDP
Date	2009
Description	C4 developed a Project Document for this Central Asian adaptation programme. The goals of the programme are to: i) promote adaptation to climate change and reduce climate-related disasters in each country; and ii) integrate climate risk management into each country's main development policies and strategies.

Project	Adaptation to the effects of drought and climate change in Agro-ecological Regions I and II in Zambia
Country	Zambia
Client	UNDP
Date	2009
Description	C4 developed a Project Document for this GEF/LDCF-funded project. The project has a two-pronged approach: i) incorporate adaptation interventions into agricultural planning at national, district and community levels to promote increased investment in adaptation in the agricultural sector; and ii) assess the costs and benefits of the proposed interventions. See http://www.thegef.org/gef/project_detail?projID=3689

Project	Africa Adaptation Programme
Country	Mauritius, Niger, Congo Brazzaville, Senegal
Client	UNDP and Japanese Government
Date	2009
Description	C4 developed four Project Documents for the African Adaptation Programme. This continent-wide initiative mainstreamed climate change adaptation into national programmes and processes through complementary regional, national, sub-national and local activities. See http://www.undp-aap.org/

Project	Carbon stocks under different land-uses in Agulhas Plain Fynbos, Nuwejaars Special Management Area and Flower Valley Trust
Country	South Africa
Client	Flower Valley Trust
Date	2009
Description	C4 conducted scientific research to assess the financial viability of using carbon finance to restore eroded peatlands and rehabilitate agricultural fields. Options assessed included using wood from alien invasive trees as mulch, compost and biochar. C4 also quantified the ecosystem carbon stocks in fynbos, vineyards,



	pastures and invasive alien tree stands in the Agulhas Plain. This study determined the carbon sequestration benefits of conserving the indigenous vegetation (fynbos) compared with other land-uses. A scientific paper entitled “Carbon stocks in fynbos, pastures and vineyards on the Agulhas Plain, South Africa: a preliminary assessment” was published in the <i>South African Journal of Plant and Soil</i> .
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Project	Africa Adaptation Programme
Country	21 countries across Africa
Client	UNDP and Japanese Government
Date	2008–2012
Description	C4 developed an African Adaptation Programme Programme Document and provided in-country technical guidance and project management for the launch of the African Adaptation Programme in Ethiopia, Malawi, Kenya and Rwanda. This continent-wide initiative mainstreamed climate change adaptation into national programmes and processes through complementary regional, national, sub-national and local activities. See http://www.undp-aap.org/

Project	Enhancing the capacity of Turkey to adapt to Climate Change
Country	Turkey
Client	UNDP
Date	2007
Description	C4 developed a Project Document for this MDGF-funded project that focused on a multi-faceted approach to maintain agricultural productivity, ecosystem goods and services, and the natural resource base in the context of a warming and drying climate. The objective of the project was to develop capacity to manage climate change risks for rural and coastal development in Turkey. Four outcomes were developed: i) mainstreaming climate change adaptation into the national development framework; ii) building capacity in national and regional institutions; iii) piloting community-based adaptation projects in the Seyhan River Basin; and iv) integrating climate change adaptation into all UN agencies in Turkey. See http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=1392

Project	Adaptation of the water sector to climate change in the Seychelles
Country	Seychelles
Client	UNDP
Date	2006
Description	C4 developed a Project Concept for UNDP that focused on building the resilience of the water sector to the anticipated effects of climate change. Interventions pertaining to water supply and management interventions were proposed. These interventions include: i) water conservation measures; ii) introduction of financial incentives or tariffs; iii) rainwater harvesting, legislation to improve water catchment functioning; iv) improved water storage capacity; v) water transfer mechanisms; and vi) capacity-building in water resource management.