Compendium of Contributions
Nature-Based Solutions

Compiled by the Nature-Based Solutions (NBS) Facilitation Team with the entrustment of China and New Zealand, the co-lead countries of the nature-based solutions coalition of the 2019 UN Climate Action Summit.

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CLIMATE ACTION SUMMIT 2019

A RACE WE CAN WIN

Compendium of Contributions
Nature-Based Solutions

Contents

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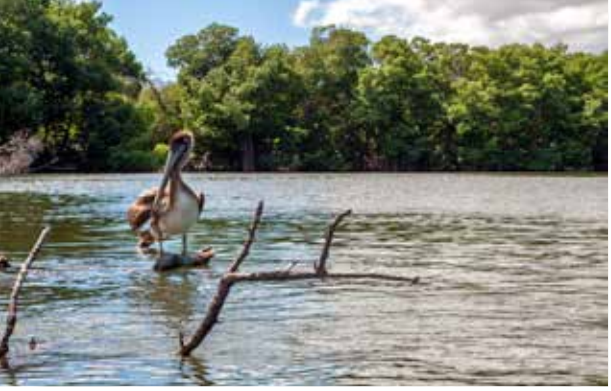

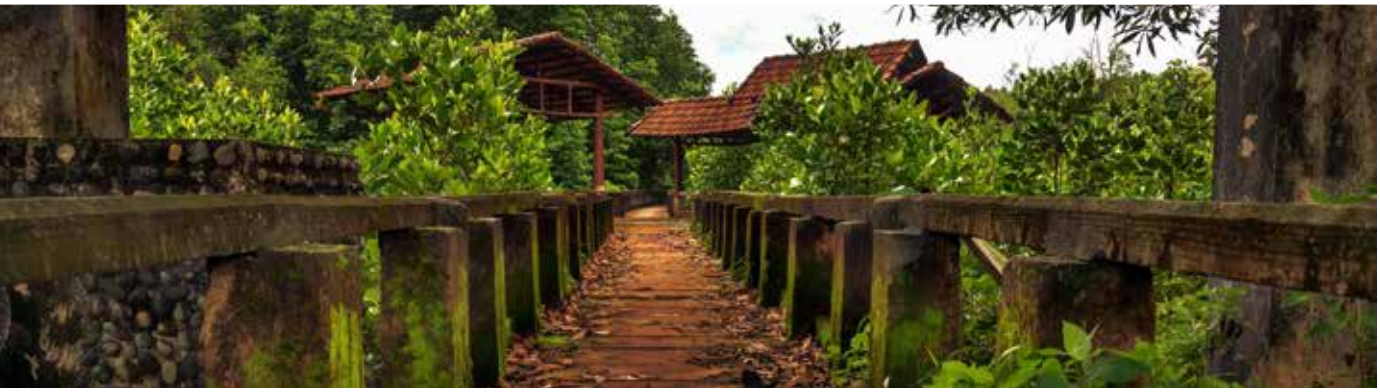

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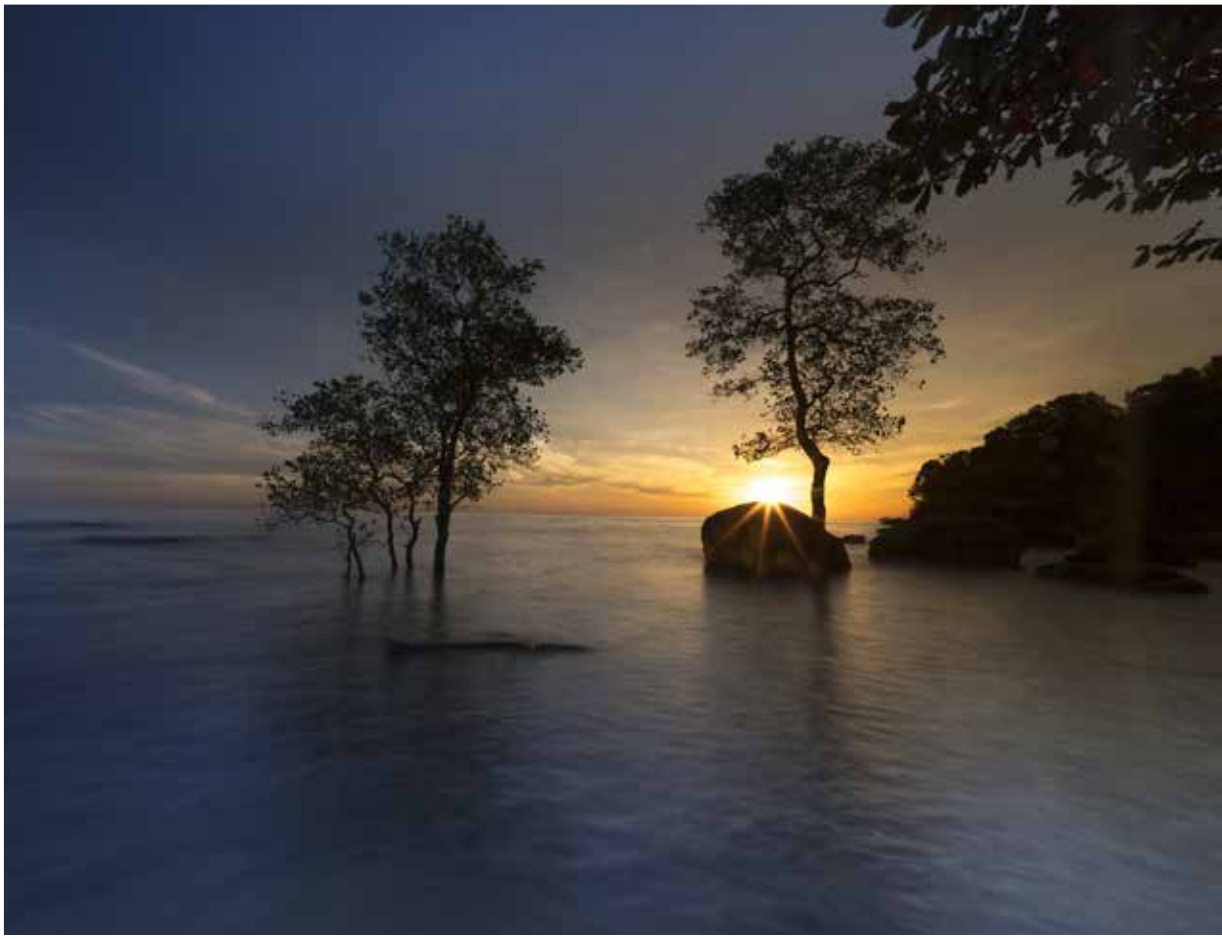
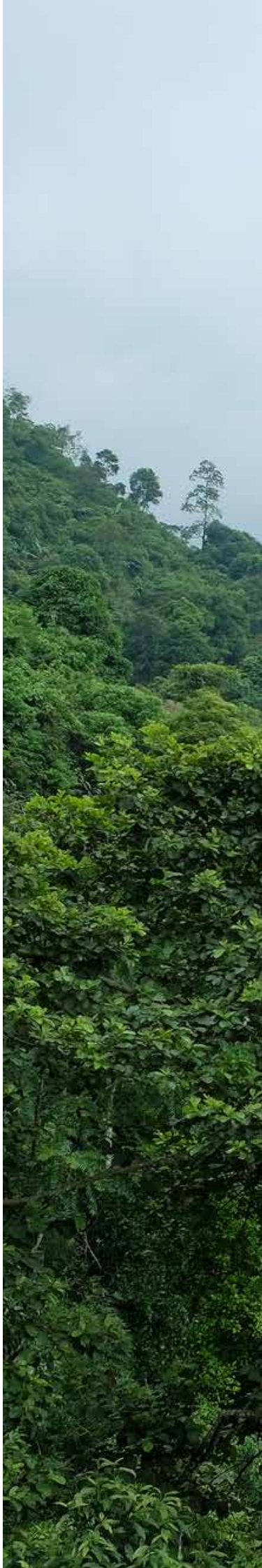
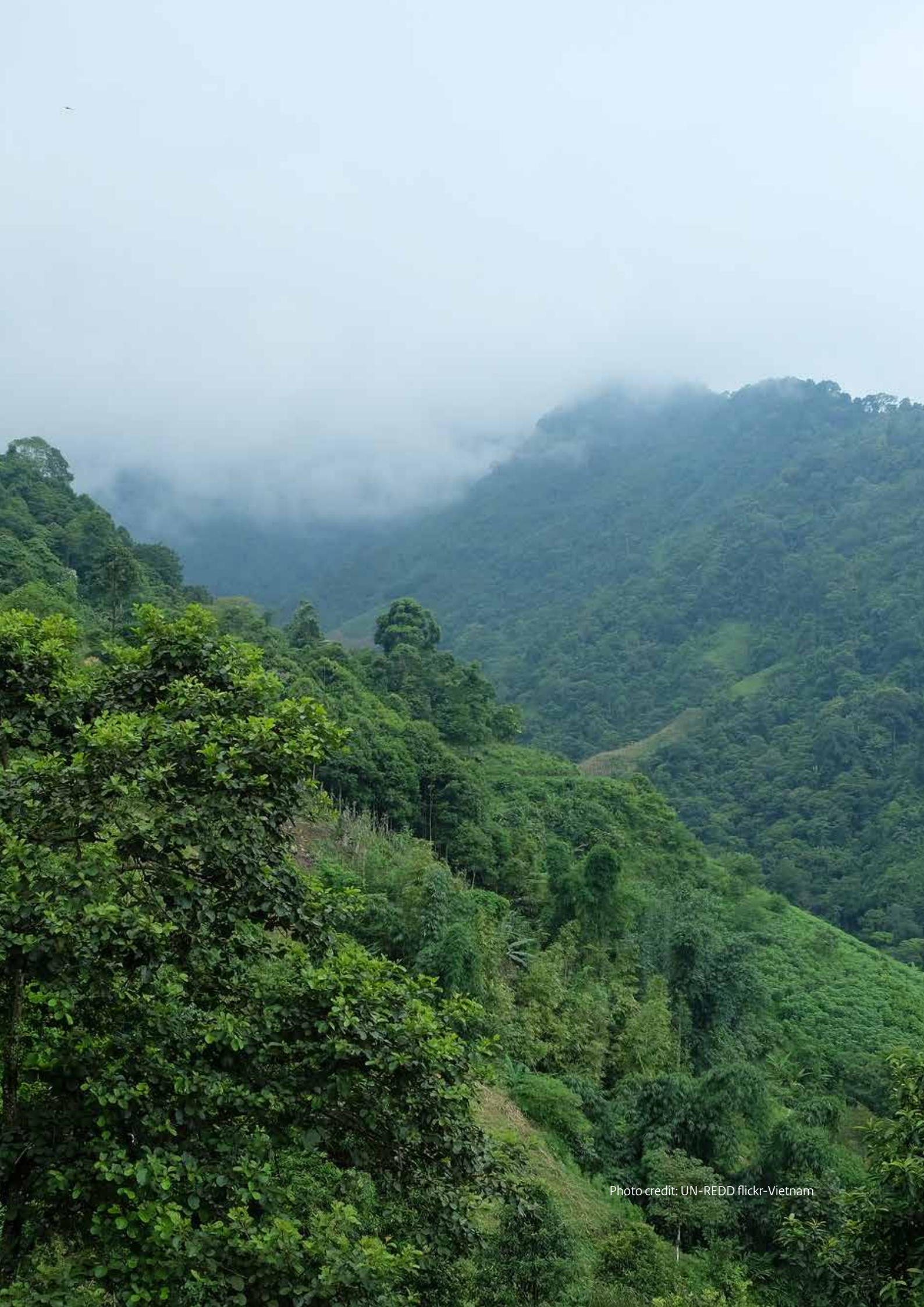
Photo credit: Left to Right: Jess Foami /Pixabay, Pixabay, Jay Park/ Pixabay, Zhao Peng, Fourth Institute of Oceanography, Ministry of Natural Resrouces-Good practice-Abandoned shrimp pond reforestation, Quang Nguyen vinh/Pixabay, Quang Nguyen vinh/Pixabay



The initiatives and best practices are listed above in the sequence reflecting the order in which they were received by the NBS Facilitation team.





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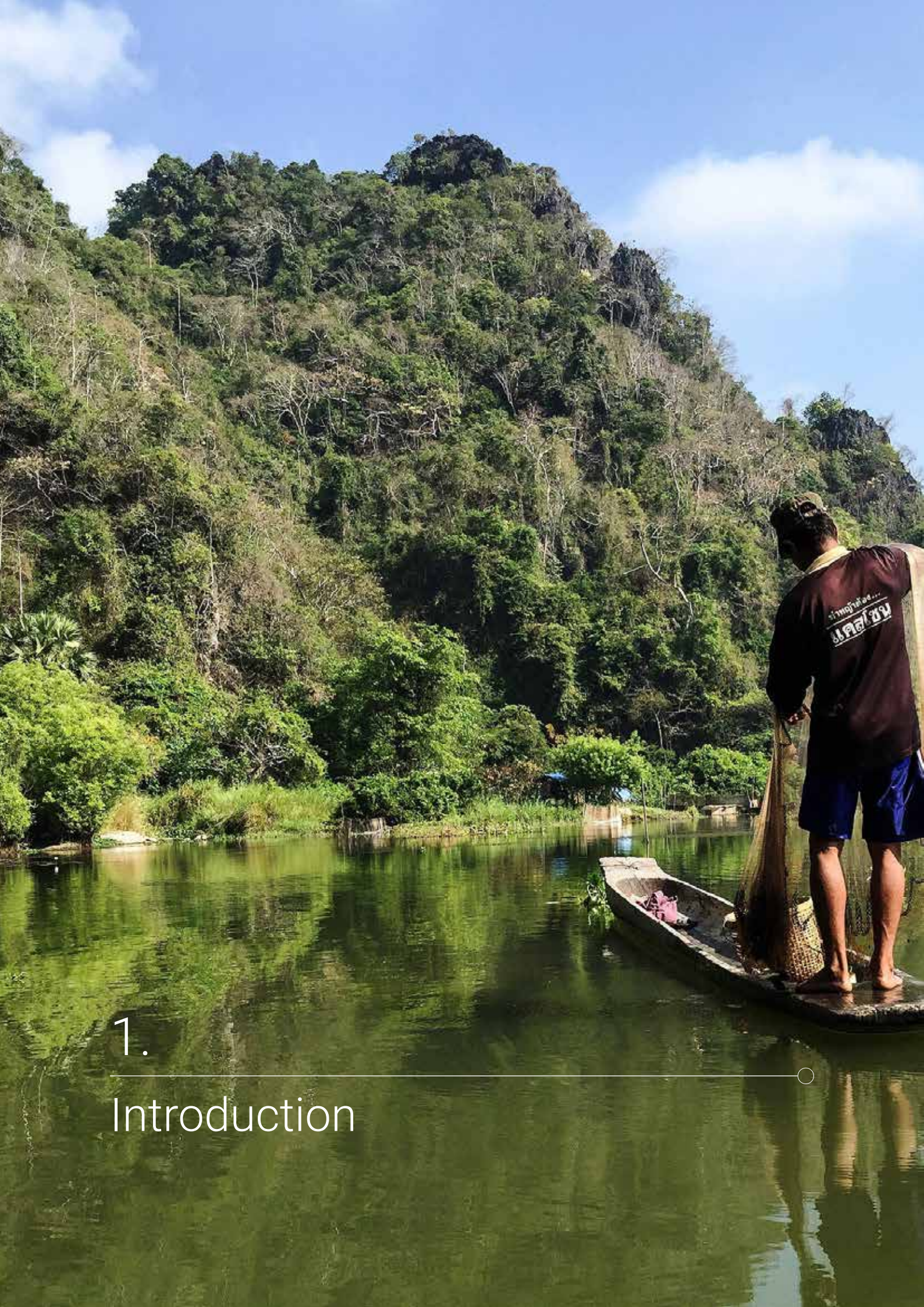
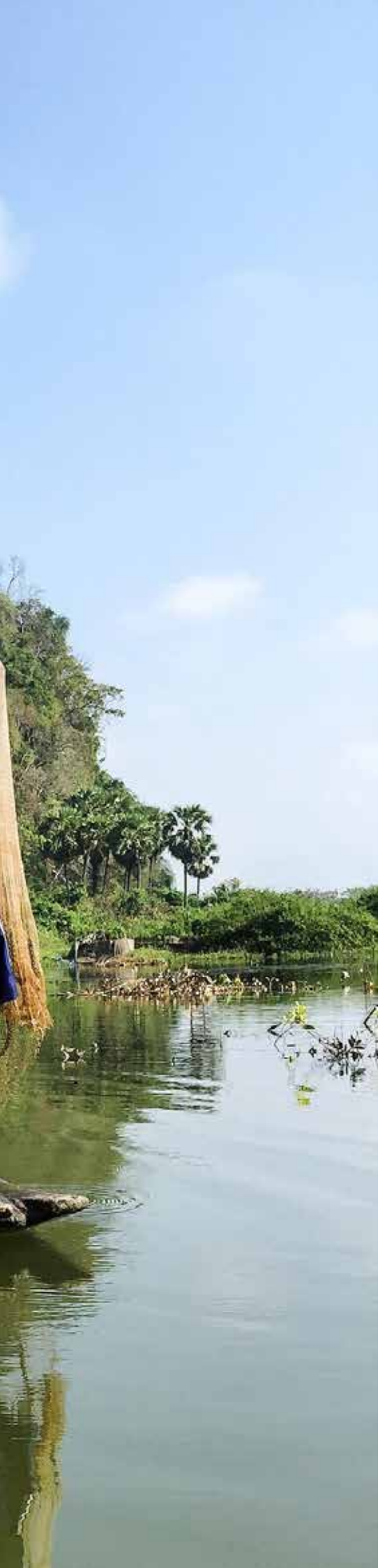


1.

Introduction



In preparing for the 23 September 2019 Climate Action Summit called by the United Nations Secretary-General, the Nature-Based Solutions (NBS) Coalition put out a global call for initiatives on how NBS can be enhanced and scaled-up. More than 180 proposals were received and have been posted online in advance of the Summit.

The purpose of this compendium is to share a summary of initiatives and best practices received from the global call. The NBS coalition co-leads, China and New Zealand, drew on the proposals to build the NBS for Climate Manifesto below in order to articulate the value and rationale for implementing NBS.

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The Nature-Based Solutions for Climate Manifesto

Developed for the UN Climate Action Summit 2019[1]

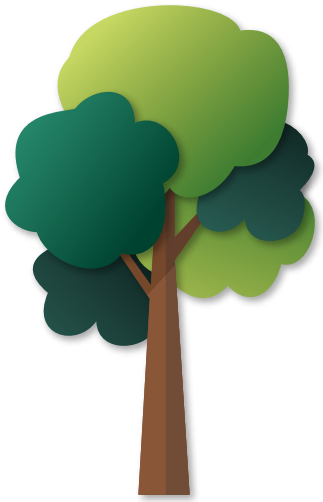
Climate is changing rapidly, undermining the security of current and future generations. Climate change and biodiversity collapse mean that our world is facing a double crisis. The threat to all countries is increasing and there is an urgent need to scale-up response efforts.

Nature-Based Solutions (NBS) are a fundamental part of action for climate and biodiversity. Authoritative research[2] indicates that NBS can provide over one-third of the cost-effective climate mitigation needed between now and 2030 to stabilize warming to below 2 °C, achieving nature's mitigation potential of 10-12 gigatons of CO_2 per year[3]. Adequate investment in NBS will help reduce financial consequences of climate change, and contribute to the creation of new jobs, to livelihood resilience and to reducing people's poverty. NBS underpin the Sustainable Development Goals: they support vital ecosystem services, biodiversity, access to fresh water, improved livelihoods, healthy diets and food security from sustainable food systems.

NBS are an essential component of the overall global effort to achieve the goals of the Paris Agreement on Climate Change. They are a vital complement to decarbonisation, reducing climate change risks and establishing climate-resilient societies. They value harmony between people and nature, as well as ecological development and represent a holistic, people-centred response to climate change. They are effective, long-term, cost-efficient and globally scalable.

NBS are already being delivered, are visible and credible, and can be exponentially scaled-up if they are fully valued and receive proper investment. Action is needed now to ensure that they achieve their full potential. At present NBS only receive a small share of climate finance. Success depends on maximizing nature's contribution to climate action, with intensified NBS from now onwards. Indeed, there are many examples of best practices and many emerging initiatives are ready for extension and intensification.

To unlock nature's full potential in climate action, world leaders should do all within their power to ensure that nature's transformative potential is fully valued and realized in decision-making especially in relation to climate action. This includes governance processes that are designed to stop the destruction of nature and the damage caused by investments or incentives that contribute to environmental harm.



[1] NBS for Climate Coalition co-leads China and New Zealand: nbs@mee.gov.cn; CCD@mfat.govt.nz; Facilitation team UNEP, CBD, 4SD nbs@4sd.info)

[2] https://www.pnas.org/content/114/44/11645

[3] https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf

There is a need to recognize that NBS have an enormous potential which can be effectively realized through international and regional cooperation among States and with the participation and inclusion of all stakeholders, including youth, women, indigenous peoples and local communities.

Those who support the NBS Manifesto in the September 2019 Climate Action Summit acknowledge the important role of nature in climate action and commit to unlocking its full potential of nature through a range of actions.

The following four areas are priorities for the members of the NBS coalition at the Summit:

1. Increasing and mainstreaming NBS within national governance, climate action and climate policy-related instruments, including Nationally Determined Contributions, Adaptation Communications, long-term low greenhouse gas emission development strategies, spatial planning, national development plans, business plans;

2. Enhancing regional and international co-operation, in ways that encourage ambition, transparency and environmental integrity and are supported by popular mobilization and campaigns, by forming synergies with regional and international development cooperation agendas and initiatives that help deliver on SDGs; this includes encouraging the establishment of a Group of Friends for NBS (GOF4NBS) following the September 2019 Climate Action Summit;

3. Generating the shifts needed in both domestic and international governance and finance to value nature and realize the potential of NBS; ensuring that financial mechanisms are supported with appropriate regulations that are enforced at the national and sub-national levels including promotion and adoption of green supply chains; avoidance of funding for deforestation and other activities that harm ecosystems; increased public and private funding for NBS investment; promoting green finance and innovative incentive measures to promote NBS;

4. Scaling-up NBS for mitigation, resilience and adaptation in key areas, ensuring people's livelihoods in the face of climate threats, including a) the conservation and restoration of forest and other terrestrial ecosystems, b) the conservation and restoration of freshwater resources as well as marine and ocean ecosystems, c) sustainable agriculture and food systems; and d) ensuring nature's systemic role in sustainable development in ways that end the loss of biodiversity and optimize nature's contribution to resilient livelihoods, green infrastructure, sustainable settlements and just rural transitions.

Bold action must be taken to conserve, restore and sustainably manage nature for climate mitigation and adaptation. The time to act is now. We will succeed by working together: reconnecting people and nature to implement the Paris Agreement effectively and secure a sustainable future for all – both now and for generations to come.

List of example initiatives of Nature-Based Solutions to raise climate ambition and accelerate action

As the co-leads of the Nature-Based Solutions (NBS) Coalition for the UN Climate Action Summit, China and New Zealand have received descriptions of nearly 200 initiatives and best practices from a broad range of entities around the world. The initiatives are all opportunities for extending and intensifying NBS on land (including forests); in freshwater; in marine and coastal areas; or in agriculture, food and nutrition. Some initiatives highlight the systemic role of nature in national development. The full collection of initiatives is available online on the NBS contributions platform hosted by UN Environment, one of the facilitators of the coalition's work.

Many of the proposed initiatives are innovative, implementable, measurable, replicable and scalable. If they are fully implemented they would make major contributions to climate action with co-benefits for sustainable development.

This paper includes short descriptions of some of initiatives which have been identified by the coalition's co-leads and Facilitation Team: they are examples of what is being done now and planned for the future. Initiatives will often complement each other, and shaped to work in synergy in order to scale-up impact.

The examples are listed below: they are organized around the four outcomes of the NBS for Climate Manifesto. The descriptions have been prepared by the Facilitation Team.:

i) Mainstreaming nature in governance and policy instruments

1. The Global Campaign for Nature, led by Costa Rica together with partner countries that include Guyana, Surinam, Bahamas, Gabon, Democratic Republic of Congo, Guatemala, and Liberia, as well as different organizations and foundations, is providing public support to the growing movement for nature and the global New Deal for People and Nature.

2. UN-REDD Programme 2020-2030, is a partnership involving the UN Food and Agriculture Organization, UN Development Programme and UN Environment to support more than 65 countries so that they can realise their full potential of emission reductions and removal through forests. This is achieved through halting and reversing deforestation and forest degradation. With 10 years of experience, this programme is

ready to scale-up the capacity of forests as the contribute to capturing between 10 and 12 gigatons of atmospheric carbon dioxide each year.

3. The contribution of Central African forests to the global fight against climate change, led by Gabon is convening with CAFI (Central African Forest Initiative), a partnership which also includes Cameroon, Central African Republic, Republic of Congo, the Democratic Republic of Congo, and Equatorial Guinea.

4. Ecological Conservation Redline (ECR) is a practice developed by the People's Republic of China to protect biodiversity and advance climate action through the development of green corridors: it is being enhanced with the support of the UN Sustainable Development Solutions Network and in partnership with the Convention on Biological Diversity (CBD) with a particular focus on the 15th CBD Convention of the Parties (oCOP) in Kunming, China in October 2020.

5. The Sustainable Growth, Livelihoods and Ecosystem Restoration Initiative, known as the Billion Trees Tsunami, is being implemented in Pakistan: it is a major effort to restore ecosystems and support reforestation.

ii) Enhancing regional and international cooperation for NBS

6. BRI International Green Development Coalition (BRIGC) is led by China: it involves 25 other countries and more than 100 other partners: it is an open, inclusive and voluntary international network which aims to incorporate green development into the Belt and Road Initiative, promote international consensus and collective actions on the development of Green Belt and Road and implement the 2030 Sustainable Development Goals. BRIGC will provide platforms for policy dialogue and communication, knowledge and information, green technology exchange and transfer.

7. Accelerating action within the food system is led by New Zealand, the Global Research Alliance on Agricultural Greenhouse Gases and its partners: it seeks to strengthen the ability of countries to monitor agricultural greenhouse gases so that they can accelerate the development of mitigation strategies, improve transparency, gain greater access to climate finance, and improve the climate benefits resulting from development and other investments.

8. The Group of Friends for NBS (GOF4NBS) is proposed by the Nature-Based Solutions for Climate Manifesto and established after the September 2019 UN Climate Action Summit. It will facilitate cooperation among governments and non-state actors in order to foster the growth of a broad movement for Nature-Based Solutions. It will be led by China and include other members of the Coalition.

iii) Shifting governance and finance to better value nature

One Planet Business for Biodiversity (OP2B): is committed to scaling-up regenerative agriculture practices, with an emphasis on soil health; increasing supply chain transparency while protecting biodiversity; and offering consumers a more diversified portfolio of locally sourced products and lines. It is being Developed under the One Planet Lab, with the involvement of the Secretariat of the Convention on Biological Diversity. The Regenerative Agriculture initiative is led by Danone and presently involving Balbo Group, Firmenich, Kellogg Company, Mars, Nestlé, JDE Coffee, Barry-Callebaut, Kering, L'Oréal, McCain foods, YARA, and Symrise.[4]

9. Amazon Sacred Headwaters is led by Amazonian indigenous federations CONFENIAE (Ecuador) and AIDESEP (Peru): it seeks to build a shared vision among indigenous peoples, NGOs, the philanthropic community, social entrepreneurs and governments towards establishing a bi-national protected region - off-limits to industrial scale resource extraction, and governed in accordance with traditional indigenous principles of cooperation and harmony that foster a mutually enhancing human-Earth relationship.

10. The Architecture for REDD+ Transactions (ART): seeks to validate and market high-quality nature-based jurisdictional carbon credits to prospective private and public-sector purchasers: the initiative is led by multiple governments, including Norway, with involvement of Winrock International, Climate and Land Use Alliance (CLUA), Environmental Defense Fund (EDF), Rockefeller Foundation and others..

11. The Natural Climate Solutions Alliance: seeks to mobilise the resources needed for NBS to contribute fully to delivery of the Paris Climate Agreement and SDGs. The resources would be used to tackle the most pressing environmental and social challenges, biodiversity and forest loss, sustainable water management and sustainable community livelihoods. The initiative to establish this alliance is being advanced by businesses and NGOs: the entities that back it are all committed to scaling-up financial resources to deliver nature-based solutions with integrity at scale. The development of the alliance involves the World Economic Forum, the World Business Council on Sustainable Development, Nature4Climate, The Nature Conservancy (TNC), Conservation International (CI), Climate Advisers and the Wildlife Conservation Society (WCS).

[4] The Business4Nature coalition, WBCSD, We Mean Business, the International Chamber of Commerce and the UN Global Compact are involved in initiatives to support businesses in pursuing sustainability standards and fulfilling targets for sustainable supply chains.

iv) Scaling up NBS for mitigation, resilience and adaptation

12. The Ocean Risk and Resilience Action Alliance is a multi-sector collaboration designed to build resilience for the Ocean and Marine Protected Areas through driving investment into coastal natural capital: it is pioneering ground-breaking finance products that incentivise blended finance and private investment. It is routing funds to the regions and communities that need it most. Current alliance members include AXA XL, Ocean Unite, Global Resilience Partnership, Government of Canada.

13. The Just Rural Transition focuses on strengthening the resilience of people's livelihoods, especially of small-scale food producers. It also prioritises the protection of the vital natural systems that sustain life in localities affected by climate change. It is proposed by the Climate Action Summit Adaptation and Resilience Coalition [co-leads UK and Egypt], the Global Commission on Adaptation and the Food and Land Use Coalition.[2]

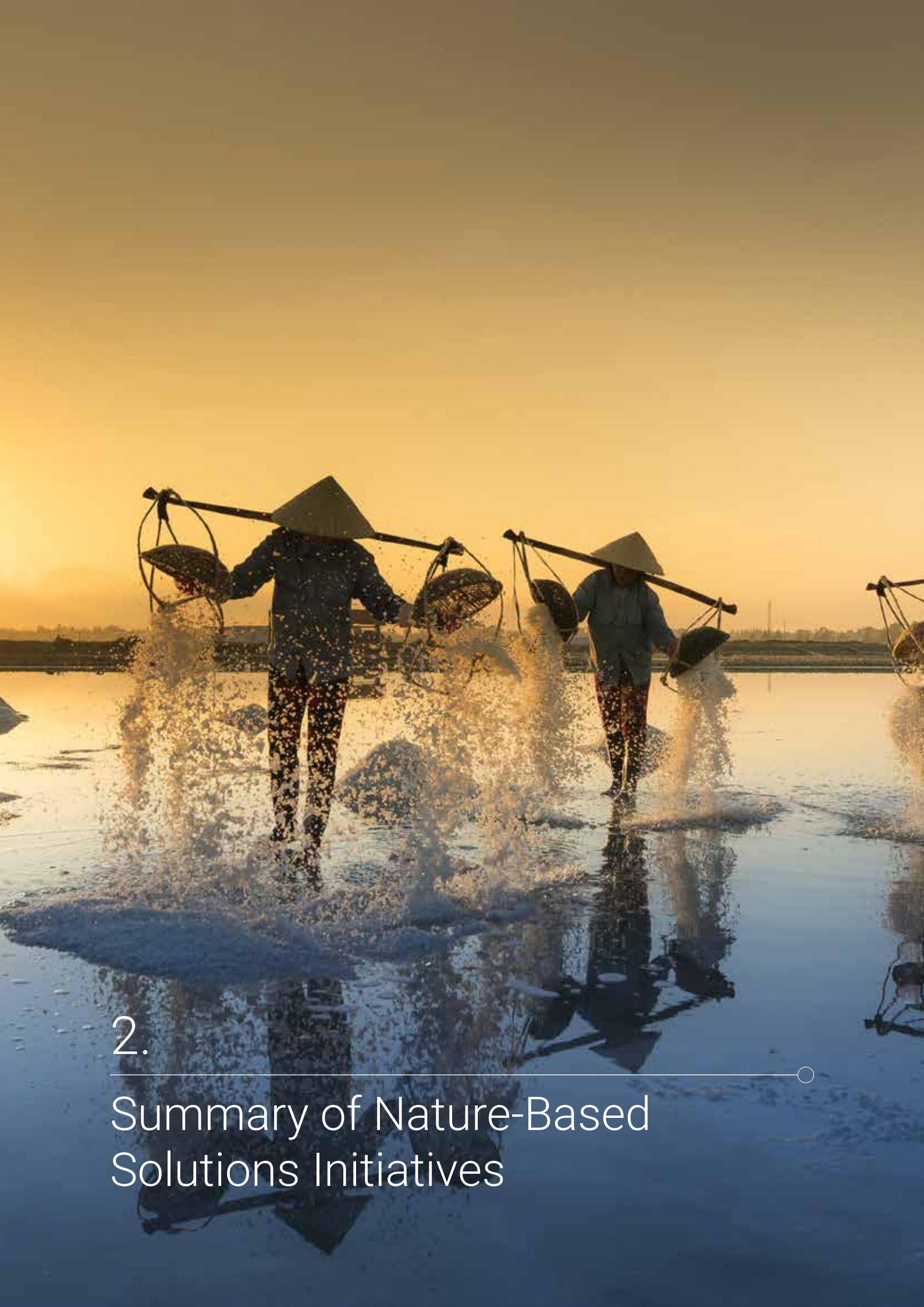
14. The Great Green Wall initiative is contributing to the Bonn Challenge for restoring forests and land-based ecosystems to stop desertification led by the UNCCD. Other partners include Wetlands International and the Blue Lifeline for a Secured Sahel – BliSS partners (Mali, Guinee, Ethiopia, Uganda, South Sudan, Global Resilience Partnership).

15. The Great Green Wall for Cities, a partnership of FAO, Royal Botanic Gardens Kew, Arbor Day Foundation, C40, UN-Habitat, Cities4Forests, Italian Society of Silviculture and Forest Ecology, Urban Forest Research Center of China and a number of countries and regional organisations.

Prepared by the team facilitating the NBS for Climate Coalition | 10 September 2019

nbs@4sd.info |190903 NBS examples | Work in progress

[5] The Food and Land Use Coalition includes EAT , FABLE, GAIN, AGRA, World Resources Institute and the World Business Council for Sustainable Development.



2.

Summary of Nature-Based Solutions Initiatives

Contribution Official Name	**Global Campaign for Nature**
Summary	**Objective:** The campaign's goal is to help conserve 30% of the Earth's lands and oceans by 2030 (30x30 target) and contribute to Paris goals through nature-based solutions by: Creating and expanding protected areas; Restoring degraded ecosystems; Establishing more ambitious international conservation targets in the post 2020 CDB framework. The specific milestone is to: increase the targets for terrestrial and marine protection (Aichi target 11) to at least 30 percent land and water by 2030 (noting the need for indigenous participation, meaningful OECMs, and for conservation to be focused on areas of high ecological value); Significantly increase funding for nature-based solutions and the amount to support the protection and management of key high ecological value ecosystems; Reinforcing the interlinkages between CBD and the UNFCCC Conventions, particularly on ambition targets and financial flows and mechanisms; Contribute to enhance NDC processes by including more specific and ambitious targets related to nature base solutions; Investing in science; and, Inspiring conservation and climate action around the world. **Description:** The Contribution is based on the notion that nature-based solutions are critical to achieve Paris Goals including 1.5 target. The contribution is centered in helping to conserve 30% of the Earth's lands and oceans by 2030. It considers forest, land and oceans as critical ecosystems that function as carbon sinks but at the same time play critical role providing ecosystem services (e.g. water provision, improving quality of air, scenic beauty) that allow life on earth, improve quality of life of human populations and guarantee means of life for rural, coastal and other vulnerable communities.
Lead Organisation(s)	Costa Rica

Photo credit: Quang Nguyen Vinh/ Pixabay

Contribution Official Name	**Tlaxcala Declaration from the 4th International Indigenous Peoples Corn Conference**
Summary	**Objective:** For Indigenous Peoples, corn is not a business. Corn, in all of its beautiful varieties and colors, has given us life and we are the beneficiaries of its wondrous diversity. It is our roots, the basis and source of our traditional knowledge, ways of knowing and ceremonies. Corn is our elder and ancestor. We use it to pray and stay connected to all life. We thank corn for the tortillas, atole (porridge), posole (hominy), blue corn mush, tamales and other traditional corn foods that our ancestors used, continue to sustain us on a daily basis, and will be the source of survival for our future generations. **Description:** The Declaration recognizes the rights of local communities to be involved in decisions regarding their towns and villages. The Declaration notes the destructive influence of the communications media in introducing patterns of behavior and consumption that are contrary to tradition. It recommends the government grants to protect dwellings in small settlements, which would ensure both the continuation of the building heritage and affordable housing. It also encourages schools of architecture to initiate courses in conservation of the vernacular architectural heritage and in traditional building techniques.
Lead Organisation(s)	International Indian Treaty Council (IITC)

Contribution Official Name	**Declaration of Takahiwai from the Climate Change, Traditional Knowledge and Food Sovereignty gathering in Aotearoa/New Zealand**
Summary	**Objective:** We came together as representatives of Maori and Indigenous Peoples of the Americas to express our collective commitment to work for solutions in our own communities, regions and the international arena, based on our traditional ways of knowing and being. **Description:** From 4-5 February 2019 we gathered for the Pacific Food Sovereignty and Traditional Knowledge Conference hosted by Takahiwai Marae. We express our heartfelt appreciation to our hosts for their warm and wonderful hospitality. We also thank Te Rau Matatini, Te Kopu and the International Indian Treaty Council for bringing us together for vital discussions and knowledges haring about Food Sovereignty, Traditional Knowledge and Climate Change. We were reminded at this gathering by our elders that the treasures that the gods gave us to sustain our lives, the gifts of the Sky Father and Earth Mother like the tuna (eel), plants and fish, fauna and forests still belong to us, as Te Tiriti o Waitangi also affirms.
Lead Organisation(s)	International Indian Treaty Council (IITC)

Contribution Official Name	**Secure Indigenous Peoples and Community Land Rights as a Nature-Based Solution to Climate Change**
Summary	**Objective:** Insecure, contested, and unjust land and forest tenure undermines international efforts to protect, sustainably manage, and restore ecosystems essential to the realization of climate and sustainable development goals. Research shows that lands managed by Indigenous Peoples and local communities with secure rights experience lower rates of deforestation, store more carbon, hold more biodiversity, and benefit more people than lands managed by either public or private entities. **Description:** Indigenous Peoples and local communities - 2.5 billion people - customarily manage over 50% of the global land mass, but legallyown just 10%, rendering them and their lands vulnerable to the economic pressures that drive land use and land cover changesworldwide. Scaling-up efforts to close this gap and secure community land rights represents the world's single greatest opportunity to simultaneously increase carbon stores, restore degraded land, reduce emissions, improve food security, diminish the likelihood of conflict, and enhance ecosystemresilience on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.
Lead Organisation(s)	Rights and Resources Initiative (RRI)
Contact	https://rightsandresources.org/en/

Contribution Official Name	**The Ministerial Katowice Declaration on "Forest for the Climate"**
Summary	**Objective:** A global initiative to enhance the role of forests in reaching the Paris goal with 81 Parties to the UNFCCC endorsing the declaration so far. **Description:** The declaration highlights the role of carbon sinks and reservoirs in climate change mitigation and the need for them to simultaneously adapt to climate change. Emphasizes the need to conserve terrestrial ecosystems including forests as great GHG sinks and reservoirs. Raises awareness of the role of forest ecosystems in the accumulation of carbon in trees and soils, and subsequently in harvested wood products. It presents a call for collective actions aimed at ensuring that global forest carbon stocks are maintained and further enhanced by 2050. Moreover, it encourages the scientific community, including the IPCC, to explore and quantify the contribution of sinks and reservoirs to achieving a balance between anthropogenic emissions and removals.
Lead Organisation(s)	81 countries (Albania, Andorra, Antigua and Barbuda, Argentina, Australia, Austria, Bahrain, Belarus, Belgium, Bolivia, Bulgaria, Cambodia, Canada, Central African Republic, Chile, China, Croatia, Cyprus, Czech Republic, Democratic People's Republic of Korea, Denmark, Estonia, Ethiopia, Fiji, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Indonesia, Ireland, Italy, Ivory Coast, Japan, Jordan, Kuwait, Lao People's Democratic Republic, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, Monaco, Morocco, Myanmar, Netherlands, New Zealand, Norway, Palau, Paraguay, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, San Marino, Saudi Arabia, Serbia, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, South Sudan, Spain, Sri Lanka, St. Lucia, State of Palestine, Sudan, Sweden, Switzerland, Thailand, Republic of North Macedonia, Ukraine, United Kingdom of Great Britain and Northern Ireland, Viet Nam)
Lead Organisation(s)	All the participants above
Contact**	Monika Figaj, Ministry of the Environment of Poland monika.figaj@mos.gov.pl

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Carbon Forest**
Summary	**Objective:** The goal of the Carbon Forests is to promote forests as the ecosystem mitigating negative climate change and to prove that the so-called additional actions in forestry on the project's areas significantly raise the absorptive potential of Polish forests. **Description:** The project is realised in 23 forest districts on the area of 13 regional directorates of the State Forests in chosen tree stands, altogether on an area of 12 thousand hectares. In comparison, the forest area in Poland accounts to 9,3 million hectares, out of which 7,6 million hectares are managed by the State Forests. The extent of the assessed effect of additional CO_2 absorption in the Carbon Forest Project is around 1 million tons in the period of 30 years, these calculations are done with the help of the software Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3). It means that in the years 2017-2046 on the aforementioned forest area included in the project, almost 1 million tons more of CO_2 will be absorbed due to the realised additional actions (exemplary actions among these are: introducing the 2nd storey of trees and shrubs, afforestation, introduction of fast growing species, enlarging areas of natural regenerations and actions preventing damages of the soil surface). In accordance with the accepted model, extension of the time period by further 20 years will cause the rise of additionally absorbed Co_2 by 1.9 million tons. If the above-mentioned assumptions were confirmed during the project's realisation and the forest area on which the additional actions achieved the expected results was 1 million hectares (out of 7,6 million hectares managed by the State Forests), the quantity of additionally absorbed CO_2 would account to 83,3 million tons in the period of 30 years.
Lead Organisation(s)	23 forest districts and 6 Polish research centres: the Forest Research Institute, the Poznań University of Life Sciences, Institute of Dendrology in Kórnik, Bureau for Forest Management and Geodesy, Taxus I.T. and University of Agriculture in Kraków
Lead Organisation(s)	General Directorate of the State Forests, Poland
Contact**	mariusz.blasiak@lasy.gov.pl

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Re-activation on Biodiversity, Forestry, Ecosystem Services & Carbon Sequestration**
Summary	**Objective:** The government of Liberia made an important plea to the Bonn Convention to restore 1 million hectares of tropical forest. Liberia is a hotspot of biodiversity in West Africa and preserves important forest areas such as the Sapo lowland tropical forest, the East Nimba and Gola Forest National Parks Grebo/Krahn Forest National Park and the Lake Piso multiple use reserve. According to a study of Conservation International, using satellite imagery, the loss of tropical forest in Liberia is still substantial and measured at 362,759.58 ha between 2000 and 2014. To counteract this trend we propose to reinforce the practical experience of the new generation of foresters in Liberia in relatively new sciences ranging from wildlife restoration to reforestation of degraded savannah like areas. **Description:** The contribution consists of two core elements. Firstly, the University is reformulating its curriculum with focus on reforestation and ecosystem research. The former program was based on classical forestry skills with focus on wood production. By reformulating the education of the new generation, we guarantee a sustainable way out of the current paradigm with focus on short-term profits. Secondly, the University will use its own campus to gain experience in carbon sequestration projects, leading to a potential huge capacity, benefitting from the natural assets that Liberia and neighboring countries have. These are the places on the globe with the highest potentials in CO_2 offsetting through tree planting.
Lead Organisation(s)	University of Liberia
Contact	Alfred de Jage, alfred.de-jager@ec.europa.eu Prof. John Woods, johntwoods38@gmail.com Benedictus Freeman, benedictusfreeman@gmail.com

Contribution Official Name	**Climate Policy Needs to Ensuring Sustainable, Equitable Food and Agriculture Systems and Protect and Restore Forests and Biodiversity**
Summary	**Objective:** Worldwide, industrial systems of animal agriculture account for approximately two-thirds of egg and poultry meat production and over half of pork production, with countries in the global South producing approximately half of the world's industrial pork and poultry. Globally, more than 70 billion land animals are used in food production each year, and this number could reach 120 billion by 2050 if the current trajectory is unchanged. Increasingly, researchers, civil society organizations, community-based organizations, and indigenous peoples' organizations and networks agree that such a scenario is wholly unsustainable and incompatible with global climate and biodiversity goals. **Description:** Brighter Green's research and the work of a growing body of natural and social scientists concludes that the current system of food production and agricultural development also forestalls the possibility of promoting sustainable, equitable, and climate-resilient food systems. This is due to industrial animal agriculture's enormous water, land, and chemical fertilizer requirements; the monocultures it creates, of both non-human animals and feed crops; the massive water pollution, deforestation, and biodiversity losses it requires; and, of course, the GHG emissions embedded in the production system itself.
Lead Organisation(s)	Brighter Green
Contact**	Mia MacDonald, maconald@brightergreen.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Zone Libellule®: A Nature-Based Waste Water Treatment Technique Leveraging the Self-Surification Capacity of Wetlands**
Summary	**Objective:** SUEZ has developed a new wetland concept known as the "Zone Libellule® (literally meaning "Dragonfly Zones"), which is at the forefront of wetland conservation and restoration. It is a nature-based solution developed by SUEZ that, in the same way as AWTs, strengthens the treatment capabilities of the natural environment thanks to bio-based filtration. In addition to its purification role, it helps the local environment to restore biodiversity while ensuring a more refined water treatment. SUEZ's scientific teams have conducted a thorough experimentation to analyze the sewage treatment performances of different types of wetlands. The study of several parameters (ex: design, climate, presence of flora, water flows, purification time) has shown a great variability in performances which has been used by SUEZ's teams to identify patents. Based on this experimentation, parameters of wetlands can be fine-tuned by combining several biodiversity layers with distinctive properties **Description:** This nature-based solution permits to tackle biodiversity erosion by restoring/rehabilitating existing wetlands and/or by designing new ones, while capturing carbon emissions through revegetation. It can also contribute to reducing water scarcity that may arise from climate change,by facilitating direct or indirect wastewater reuseafter treatment.
Lead Organisation(s)	SUEZ
Contact	s.pellion@suez.com

Contribution Official Name	**Building a Global Goil Movement Through Philanthropic Investment**
Summary	**Objective:** Building healthy soil, or more specifically, building soil carbon via farming practices, represents a natural form of carbon sequestration that protects the landscape's surface above and generates biological activity below, while at the same time, it reduces water use, as well as water pollution by reducing soil erosion and non-point source pollution from fertilizer run-off. Increasing the amount of organic matter in the soil will allow it to store more carbon, and research has found that it can be done within three to 10 years. **Description:** The Global Alliance for the Future of Food is an alliance of 25 philanthropic foundations, which invests in projects on all five continents. The Global Alliance works with its members and with others to transform global food systems. Our program area on climate aims to reduce GHG concentrations by transforming food systems globally and improving the climate resiliency of food systems. One of our focus areas is fostering a global movement on healthy soils in order to unlock the multiple co-benefits, including soil carbon sequestration. We do this by (1) convening key system actors representing a diversity of local, regional, international, sectoral and socio-economic perspectives and facilitating dialogue around a shared vision and action plan; (2) forging new insights based on diverse and emerging evidence; (3) facilitating a global movement amongst our foundation members and their vast international network of grantees and partners; and (4) supporting the alignment and utilization of all forms of capital via impact investing.
Lead Organisation(s)	The Global Alliance for the Future of Food
Contact	Ruth Richardson, ruth@futureoffood.org

Contribution Official Name	**Agroecology: A Nature-Based Food System**
Summary	**Objective:** Farming the land as if nature doesn't matter has been the model for much of the Western world's food production system for at least the past 75 years. The results have been disturbing: depleted soil, chemically fouled waters, family farms vanishing, a worsening of public health and more. But an approach that combines innovation and tradition has emerged, one that places ecological science, food security, nutrition, human rights, climate resilience, and sustainable development at the center of agriculture. It's calledagroecology, and it places nature at the center of agriculture. **Description:** Agroecology measures its success not only by bushels and calories but by how well food nourishes people while regenerating soil and water and helping more farmers secure land title and make a dignified living. Moreand more countries —encouraged by networks of small and medium-size farmers organized in networks likeLa Via Campesina—are actively shifting to policies and investments that support nature-based, agroecological food systems.
Lead Organisation(s)	AgroEcology Fund
Contact	Daniel Moss, Daniel@agroecologyfund.org

Contribution Official Name	**Green Supply Chain to Halt Global Greenhouse Gas Emissions due to Deforestation and Degradation**
Summary	**Objective:** The key contribution of the initiative is to stop the global GHG emissions resulted by global deforestation, land degradation and natural habitat conversion (hereinafter as deforestation/conversion), throughbuilding up the 'Deforestation/ Conversion Free Commodity Supply Chain' that linking from producer countries to market countries, and key business players throughout the supply chain. **Description:** Deforestation and conversion-free commodity supply chains require an increased efficiency in forest governance, land use likeplantations through sustainable management, and should reduce further conversion of virgin forests, and other natural vegetation, hence maintaining their ability to bind carbon. By establishing deforestation and conversion-free commodity supply chains, we will enable better land use planning, forest management and robust economic model as well, contributing to emissions reductions. By working with a diverse set of partners which are influential in the industries we will magnify our impact beyond those industry associations and businesses with which we engage directly, further impacting on emissions from deforestation and conversion
Lead Organisation(s)	WWF China

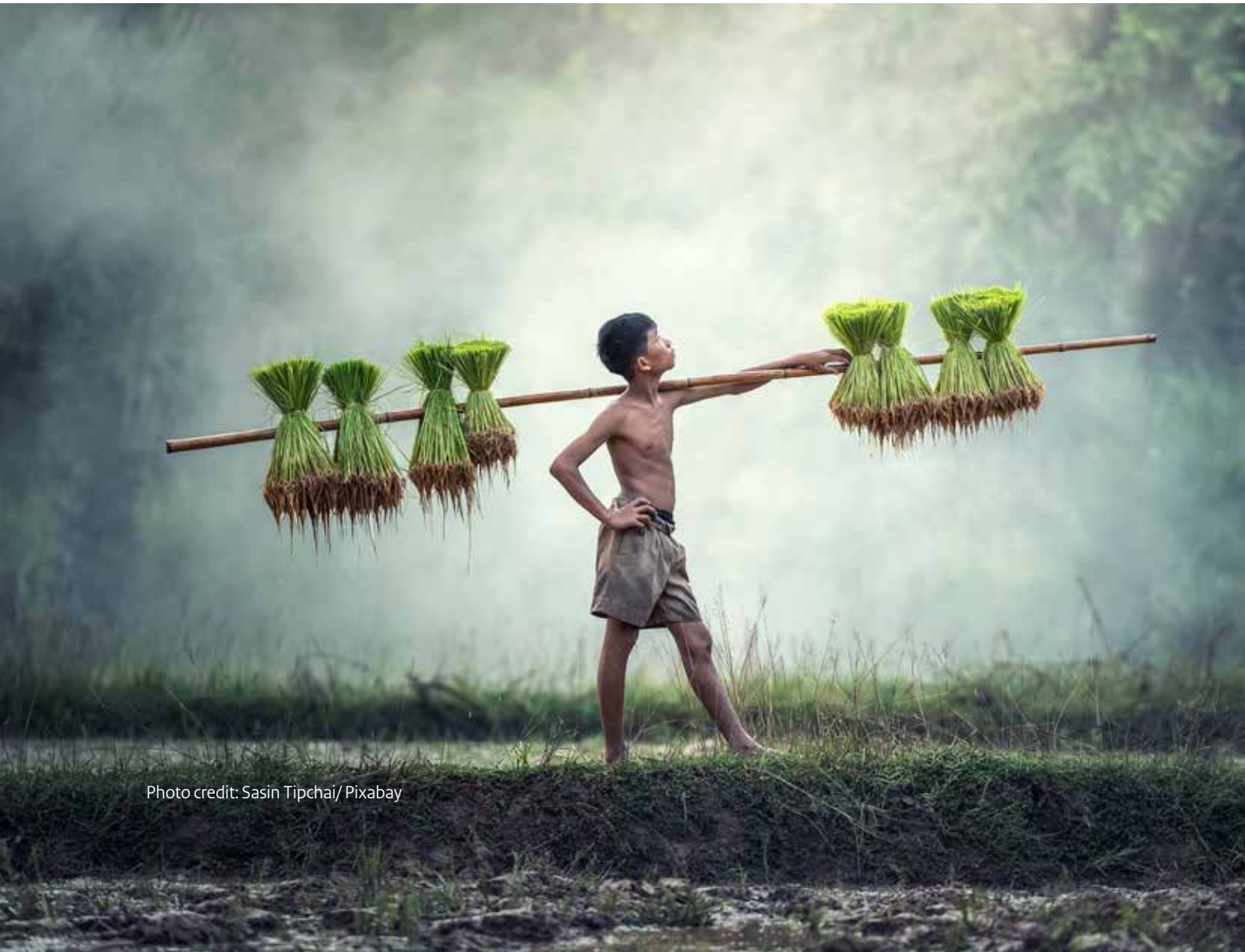


Photo credit: Sasin Tipchai/ Pixabay

Contribution Official Name	**Joining Forces and Prioritising Nature-Based Solutions withSafeguards**
Summary	**Objective:** Science is clear: half a degree matters – each year matters – each choice matters. Climate change interacts with and exacerbates other drivers of biodiversity loss, and vice-versa. Both IPCC and IPBES reports describe the increasing impacts of climate change on biodiversity and ecosystem services, and the crucial role of ecosystem services for climate regulation. Climate, biodiversity, and long-term sustainability objectives can only be achieved through addressing climate change, land, and ecosystem degradation in an integrated manner. Better alignment between policies to phase out counterproductive measures, emphasis on multiple benefits, and scaling up action through more integrated approaches are vital and urgent. The principles and safeguards laid down in the voluntary guidance adopted at CBD CoP14 for the design and effective implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction1 could serve as a basis for safeguards for nature-based solutions/natural climate solutions. **Description:** This submission includes a number of examples of how the European Commission promotes nature-based solutions (NBS). Depending on the user community, NBS are shaped also as ecosystem-based adaptation (EbA), Green Infrastructure (GI), ecosystem-based Disaster Risk Reduction (EcoDRR), or Natural Water Retention Measures (NWRM). They all deliver multiple benefits, based on the assumption that ecosystems, if in healthy condition, deliver at the same time important services for human well-being and address economic, social, and environmental targets, including climate change adaptation and mitigation and biodiversity conservation, enhancement, and restoration. Improved implementation of the current policies and strategies will contribute to reducing carbon emissions and climate vulnerability and increasing carbon capture, climate resilience and food security. The implementation of nature-based solutions creates jobs and business opportunities and these ecosystem-based approaches are ready for use and easily accessible. NBS can significantly contribute to the transformative change needed to revert the climate and ecological crises, as outlined in the IPBES global assessment on biodiversity and ecosystem services.
Lead Organisation(s)	European Commission (EC)
Contact	DG ENV, Karin Zaunberger, karin.zaunberger@ec.europa.eu

Contribution Official Name	**The Contribution of Central African Forests to the Global Fight against Climate Change**
Summary	**Objective:** The Central African rainforest is the second largest tropical forest basin in the world. Historically, it has been spared from deforestation but now faces mounting pressure. Recent studies estimate that by 2100 the forest in DRC will disappear if the UN population projections materialise and the low efficiency of food and wood energy systems is maintained. Central African countries have made important commitments to reduce threats to their forests and significant donor contributions have been made to support programs to fight deforestation. However, current efforts will not be sufficient to counter the catastrophic loss of carbon sink, rainfall generation and biodiversity. Further action is required. This is what this contribution seeks to trigger. **Description:** Central African countries engage to increase their climate ambition, maintain/stabilize their forest cover and thus continue to stock the equivalent of approximately 70 GT of C. The Central African rainforest will thus continue to provide livelihoods to 60 million people and maintain regional rainfall patterns. This capacity of the Central African rainforest is under threat mainly due to population increase and expansion of agriculture, so the challenge is to change the production systems of tens of millions of poor households, ensure their food security and slow down the unsustainable population increase. To realize this contribution countries are/will: • Revise the INDCs and include the land use and forest sector in the emission reduction calculations (DRC, Rep Congo) or include additional activities such as illegal logging that constitute the bulk of the emissions in Gabon in the new NDCs by 2020 • Stabilize forest cover (i.e. reduce forest loss) by DRC in the letter of intent with CAFI • The non-conversion of the most precious forests (high carbon stock and high conservation value in the letters of intent with CAFI (Gabon, Rep Congo) • The certification of forest concessions (the main sources of CO_2 emissions in Gabon) • Orient agro-industrial plantations larger than 5ha to savanna areas instead of forests in Rep Congo • Avoid draining and drying of peatlands in the CAFI letter of Intent (Rep Congo)
Lead Organisation(s)	Gabon, Central African Forest Initiative (CAFI)
Contact	Gabonese Government: Stephen Stanislas Mouba, moubastanislas@gmail.com secretariatcafi@gmail.com

Contribution Official Name	**Large Scale Forest Conservation with Indigenous People in the Highly Threatened Southeastern Amazon of Brazil**
Summary	**Objective:** International conservation NGOs have committed long-term with the Kayapo to help them build capacity to protect their lands, constitutional rights and the primary forest ecosystems on which their culture and livelihoods are based. NGO projects combined with in-country governmental and other non-governmental agency support for Kayapo communities have developed scalable resource management and income generation projects with Kayapo communities as well as enabling territorial monitoring and control in the absence of government enforcement of protected areas and indigenous territories. International NGOs have helped Kayapo communities to set up and administer their own local indigenous NGOs that are critical to building capacity to manage their territories sustainably. From space we observe significant correlation between the rate of deforestation and fire events (hot spots) and the presence/absence of NGO investment with Kayapo communities such that more than nine million hectares of primary forest remains reasonably intact where Kayapo communities have local NGO representation and receive outside investment; whereas, 1.2 million hectares of the contiguous Kayapo territories that receives no NGO investment is heavily invaded and degraded. **Description:** The Kayapo, as other Indigenous Amazonians, assert a fundamental interdependence between cultural identity and territory and, therefore, their struggle coincides with the mission of conservation NGOs to preserve biodiversity, natural ecosystems and carbon stocks. Indigenous grounding of culture and identity in territory are based in culturally distinct cosmologies and world views that include animals, plants, and other "natural" phenomena in the domain of culture and society. Indeed, sustainability of indigenous territories cannot be conceived in purely ecological or economic terms; rather there is also a question of the viability and vitality of cultures.
Lead Organisation(s)	ICFC and EDF Climate Land Ambition and Rights Administration (CLARA)
Contact	Barbara Zimmerman b.zimmerman@wild.org; zimmerman@ICFCanada.org

Contribution Official Name	**The International Platform for Insetting**
Summary	**Objective:** Insetting is a vision shared by a growing number of organizations in the world, on how companies can balance their operations with the ecosystem they depend upon. **Description:** Insetting is an innovative approach that combines the mechanism of carbon compensation with effective management of environmental and societal challenges within and beyond a company's value chain. Insetting projects are interventions along a company's value chain that are designed to generate carbon reduction and sequestration whilst creating additional positive impacts on communities, landscapes and ecosystems. This can include natural resource conservation and restoration, biodiversity, improved livelihoods, enhanced infrastructure and capacity building. Effective insetting interventions are typically based on climate smart agriculture practices and agroforestry programs at supplier site as well as re-establishing natural carbon sinks through conservation and restoration of the surrounding landscapes including forests, wetlands, coastal and marine ecosystems. This allows companies to achieve corporate sustainability goals, whilst building climate resilience at the heart of their value chain and to future proof their business operations. Insetting is a promising and strategic mechanism for companies to invest in nature and to scale the positive impacts of nature-based solutions. Measurable and certified carbon reductions along their value chains enable companies to set long-term net-zero or even net-positive commitments that reflect an aspiration to transform their businesses and ultimately harmonize their operations with the ecosystem they depend upon. Under the International Platform for Insetting (IPI), sustainability leaders who are pioneering the concept of insetting collaborate in order to further enhance and develop this emerging and promising approach. The IPI is a cross-sector initiative of diverse stakeholders from key sectors in the global economy, launched in 2015 around COP21, with founding members such as Nespresso, AccorHotels, L'Oréal, Kering and Chanel.
Lead Organisation	International Platform for Insetting
Contact	Sandra Brand, sandra.brandt@insettingplatform.com

Contribution Official Name	**Ecosystem Restoration as a Nature-Based Solution for Climate Action**
Summary	**Objective:** Reversing degradation of land and marine ecosystems can provide more than one-third of the mitigation required by 2030 to remain below a 2°C increase in average global temperatures and at the same time conserve biodiversity, increase food and water security, augment the overall well-being of human societies and help achieve the sustainable development goals. More than two billion hectares of the world's degraded landscapes and seascapes offerpotential for restoration. An initial target is the restoration of 500 000 ha of degraded ecosystems by 2030. Restoration increases the capacity of ecosystems to absorb and store carbon. It also increases the availability of fertile agricultural land and natural resources and hence reduces carbon emissions from deforestation caused by the expansion of agriculture. **Description:** Restoration increases the capacity of ecosystems to absorb and store carbon. It also increases the availability of fertile agricultural land and natural resources and hence reduces carbon emissions from deforestation caused by the expansion of agriculture. Land restoration and reduced and avoided degradation of forests, wetlands, grasslands and croplands could provide more than one third of the most cost-effective greenhouse gas mitigation activities required by 2030 to keep global warming to below 2°C (IPBES 2018). Newly planted forests capture 1-10 t CO -e/ha/year and the restoration of 350 million hectares of degraded land over the next 10 years could remove 13-26 Gt of CO_2-e from the atmosphere (GPFLR, 2018), while restored seagrass beds can absorb 1.3 CO -e/ha/year over the first ten years (Greiner et al, 2013). Other carbon-rich ecosystems in need of restoration include peatlands and mangroves.
Lead Organisation(s)	FAO, UN Environment, IUCN
Contact	Mette.Wilkie@fao.org Eduardo.Mansur@fao.org Tim.Christophersen@un.org Carole.SAINT-LAURENT@iucn.org Alexander.Jones@fao.org

Contribution Official Name	**Low Carbon Livestock Coalition**
Summary	**Objective:** The Low Carbon Livestock Coalition (LC2) aims to reduce GHG emissions from livestock systems by improving the use of nutrients, building carbon and nitrogen stocks in soils, and improving the use of livestock products in healthy human diets, taking advantage of untapped potential and co-benefits.Healthy Diets. Persisting hunger and nutrient deficiency have now been joined by over-nutrition and obesity to form the double burden of malnutrition. Livestock systems and products remain a powerful tool to combat hunger and nutrient deficiency but are also implicated in a number of health issues associated with high levels of consumption. Public awareness, dietary guidelines and private sector strategies are key to ensuring that livestock products can be a part of a healthy and diverse diet. **Description:** The contribution supports both climate mitigation and adaptation, and will result in higher food security, agricultural productivity and rural incomes, and additional environmental benefits, such as water and biodiversity. Emissions from livestock systems could be reduced by 50%, considering gains in emission intensity, soil carbon offsets and moderate consumption levels. Increased soil carbon stocks and efficient C and N flows enhance resilience to shocks. Livestock systems based on a circular use of biomass augment the overall stability of food systems.
Lead Organisation(s)	FAO
Contact	Alexander.Jones@fao.org Berhe.Tekola@fao.org

Contribution Official Name	**Recarbonization of Global Soils**
Summary	**Objective:** RECSOIL, the Recarbonization of Global Soils, constitutes an implementing facility for scaling up SOC-centered SSM, based on collaborative efforts under the Global Soil Partnership (GSP). The main priorities of RECSOIL and associated multiple benefits are: a) to prevent further SOC losses from carbon rich soils (peatlands, black soils and permafrost) and, where feasible, to increase SOC stocks; b) enhance farmer's income through increase of soil productivity; and c) contribute to food security and nutrition. RECSOIL will focus on agricultural and degraded soils. The facility will support the provision of incentives to farmers who agree to implement SOC-centered SSM practices. One of the facility's central funding mechanisms will be voluntary carbon credits, technically backed up by other RECSOIL components such as the Global Soil Organic Carbon Monitoring Network. **Description:** Soil organic carbon contributes to the storage, availability and cycling of plant nutrients; soil biodiversity; soil porosity, aeration, water-holding capacity and hydraulic conductivity; thermal properties; and mechanical strength. All these functional properties contribute to: enhance fertility, productivity and yields; increase quality of food, water retention, erosion prevention, filtration, and denaturing of pollutants; increase resilience to droughts, floods and land degradation; and ultimately improve the overall climate resilience of agroecosystems and farmers' livelihoods as well as farmers' adaptive capacity.
Lead Organisation(s)	FAO
Contact	Eduardo.Mansur@fao.org Alexander.Jones@fao.org

Contribution Official Name	**Climate Change and the Ocean - Adaptation Strategies for Fisheries and Aquaculture**
Summary	**Objective:** This contribution highlights FAO's new adaptation toolbox for fisheries and aquaculture. This toolbox provides guidance on the tools and methods available to facilitate and strengthen adaptation, thus contributing to filling the current knowledge gap and provide guidance for a coordinated and continued adaptation strategy. It contains a portfolio of climate adaptation tools and methods recommended and currently available to governments, industries and individual fishers and fish farmers. **Description:** The toolbox includes three fundamental strategies to reduce impacts and take advantage of opportunities from climate change: i) institutional adaptation, ii) livelihood adaptation, and iii) risk reduction and management for resilience. It foresees to build climate change adaptation strategies based on a good understanding of a given fishery and aquaculture system and a reliable assessment of current climate variability and potential future climate changes, as pre-requisites for determining early low- or no-regret options and longer-term adaptation interventions respectively. The toolbox facilitates a key step in climate change adaptation, which is putting adaptation tools into practice.
Lead Organisation(s)	FAO
Contact	Manuel.Barange@fao.org Alexander.Jones@fao.org

Contribution Official Name	**Food Loss and Waste Reduction for Climate Action**
Summary	**Objective:** The Food Loss and Waste Reduction for Climate Action Initiative aims at reducing FLW by improving good practices along the food supply chain, supported by appropriate climate-smart technologies and an adequate infrastructural support bases. **Description:** FAO, through its Technical Cooperation Programme, has laid a good foundation in countries across the globe to apply systemic approaches to address the reduction of FLW. This included supporting the public sector to develop strategies; promoting good handling practices and better coordination along the value chain; adding value through processing and packaging; improvements in business models; introduction of locally adaptable innovative, sustainable and climatesmart technologies; promoting private sector investments in areas that serve collective requirements such as packhouses and cool and dry storage facilities; and maximizing by-product utilization through circular economy approaches (composting, feed utilization, etc.) aimed at reducing GHG emissions from landfills.
Lead Organisation(s)	FAO
Contact	Alexander.Jones@fao.org Jamie.Morrison@fao.org

Contribution Official Name	**Forests and trees: A Nature-Based Solution to Global Urban Challenges**
Summary	**Objective:** The Great Green Wall for Cities (GGWC) aims to use FBS to improve ecological continuity within urban areas and, by 2030, create up to 500,000 hectares of new urban forests and restore/maintain up to 300,000 ha of existing natural forests in and around cities in the Sahel and Central Asia. At least three cities in each of 30 countries will develop an integrated forestry strategy and implement it on a substantive scale. **Description:** Urbanization is accelerating—the proportion of people living in cities will be 60% in 2030 and 66% in 2050. Nearly 90% of this increase will occur in Africa and Asia. Cities are major contributors to climate change, but are also vulnerable to its effects. They are also uniquely positioned to adapt to these effects and mitigate some of their causes. In drylands, in particular, the increasing effects of climate change and landscape degradation are expected to increase exposure of city-regions to severe droughts, heatwaves, extreme winds, floods and landslides, affecting hundreds of millions of urban dwellers. Forests-based solutions (FBS) are a valuable tool to strengthen cities' resilience and support sustainable urban development.
Lead Organisation(s)	FAO
Contact	Mette.Wilkie@fao.org Alexander.Jones@fao.org

Contribution Official Name	**Climate Change and Plant Health: Biodiversity to the Rescue**
Summary	**Objective:** The Climate Change and Plant Health Initiative aims at supporting climate mitigation and adaptation as well as other important co-benefits by improving knowledge, best agriculture practices and sustainable management in the agricultude sector. **Description:** The program will strengthen the global resilience of agroecosystems to climate-induced crop and pest impacts by applying a holistic approach aligning interventions at national and local level, implemented in synergy with all relevant institutions and employing new technologies for information dissemination. The program will encompass the development of (i) global guidelines and a roadmap for tackling plant health in a changing climate and establish mechanism(s) for global and regional collaboration, (ii) the surveillance of presence and impact of pests and diseases and introduce appropriate diagnostic methods and services plus reporting mechanisms, (iii) the support for increasing network of agrometeorological stations and increase national and global capacities to produce and dissemination agromet information and early warning systems (iv) genetic resources with increased pest and disease resistance and abiotic stress resilience and (v) and improving best crop management practices and utilization of FAO's farmer field school networks for information dissemination.
Lead Organisation(s)	FAO
Contact	Hans.Dreyer@fao.org Alexander.Jones@fao.org

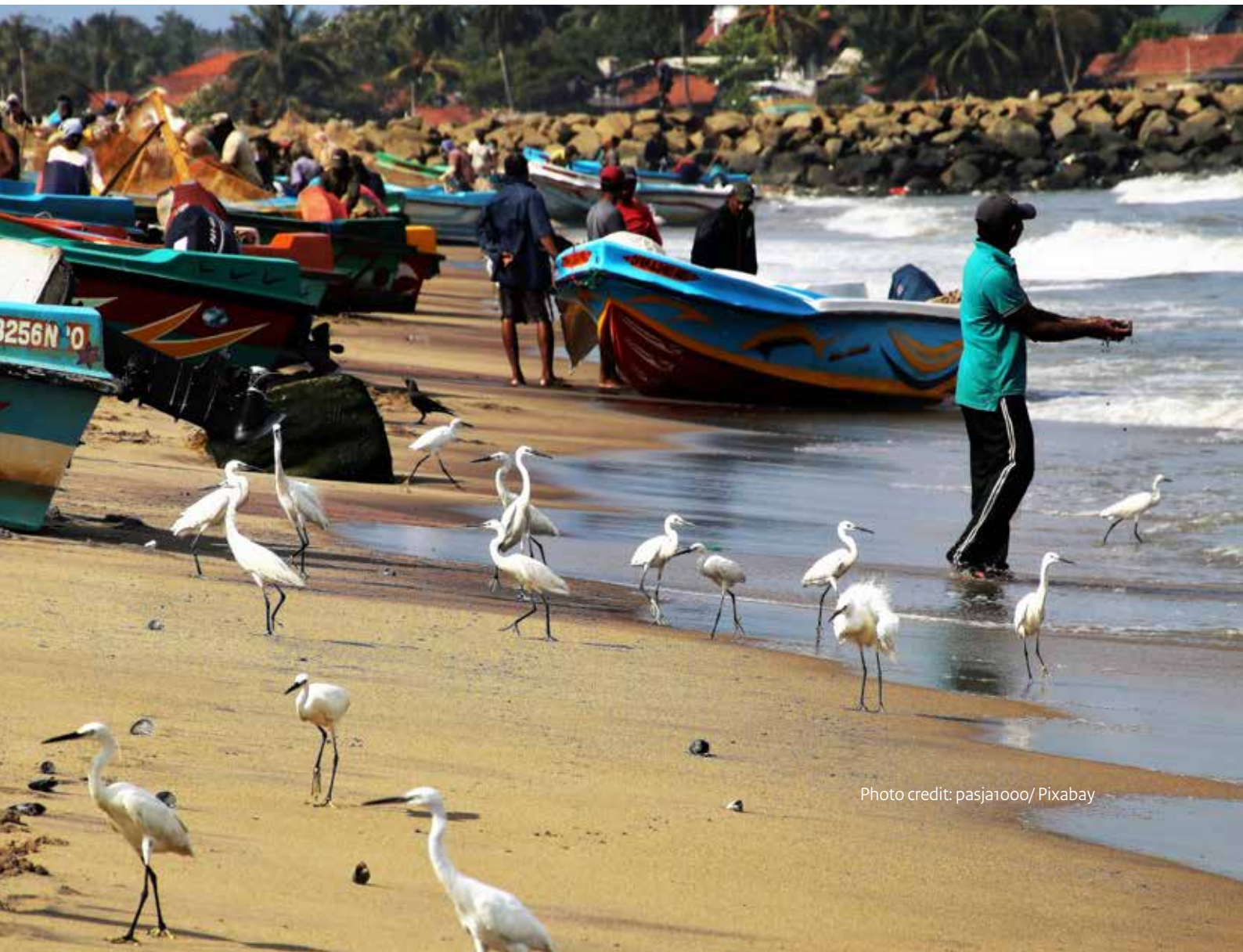
Contribution Official Name	**Macroalgae Farming: An Ocean-Based Solution to Reduce Climate Change**
Summary	**Objective:** Fearless Fund, a 501(c)3 committed to ocean health, and directed by Alyson Myers, has conducted research, including in-water trials, on the farming of Sargassum under US DOE ARPAE funding. Efforts have focused on farming and wild harvest in nuisance situations. **Description:** The contribution contributes to novel ocean-based production—for energy transition, for raw materials (new sourcing), and for ocean restoration. Plant or animal biomass grown in oceans has the potential to save costly inputs of land-based agriculture of fresh water, land and fertilizers. Macroalgae farming has the potential to assist two strategies to avoid climate change: the conversion of biomass to carbon-neutral fuels to reduce fossil fuel usage and carbon removal from the system. The process avoids the use of land, fresh water and fertilizers typical of landbased agriculture (for example, corn for ethanol). Macroalgae farming also provides benefits to ocean ecosystems in the form of increased habitat for fish and invertebrates which may increase fisheries and biodiversity. Sustainable harvest is important to providing ecosystem benefits.
Lead Organisation(s)	Fearless Fund
Contact	alysonmyers1@gmail.com

Contribution Official Name	**Restoring Forests and Lands as a Crucial Response to Climate Change and Sustainable Development**
Summary	**Objective:** This CAS initiative uses the already significant progress on the Bonn Challenge (BC) as a springboard for additional commitments and to accelerate action on the restoration of deforested and degraded lands, recognized as a critical nature-based solution to climate change. The initiative sends a message of hope by showcasing credible and measurable progress in pledges and in implementation on the ground, with information from the BC Barometer of Progress, in terms of carbon mitigation, biodiversity and jobs. For additional information, see http://www.bonnchallenge.org/ and https://infoflr.org/ The Bonn Challenge is the predominant voluntary political movement to change the dynamics of land use and human wellbeing. Nevertheless, there is still a great opportunity to harness it to further increase climate ambition and accelerate action on the ground. To materialize the vision of the Bonn Challenge it is vital to position it at the highest levels of political awareness and will. The CAS can be instrumental for this purpose as the UN Secretariat's leadership could help foster additional commitments and a call to action. **Description:** This initiative builds on the BC as a UNFCCC Lima-Paris Action Agenda initiative, giving stronger effect also to the NYDF and the recently adopted Decade on Ecosystem Restoration 2021-2030. It is supported by existing regional initiatives and processes, through BC regional ministerial level processes and regional platforms in Central, Eastern, Southern and West Africa, Latin America and the Caribbean, ASEAN, and the Caucasus and Central Asia regions.
Participants*	International Union for Conservation of Nature as the Secretariat for the BC with its cohort of 59 governments and private entities who have already committed to the BC. (IUCN is an IGO with UN Observer Status.)
Lead Organisation(s)	International Union for Conservation of Nature (IUCN)
Contact**	Carole Saint-Laurent, Carole.Saint-Laurent@iucn.org, bonnchallengesecretariat@iucn.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Osi Joe Hose Touching Lives Initiative**
Summary	**Objective:** Random sprawl development is a problematic issue. Several significant development and health issues are brought to control through extensive study of the environmental and sustainable development plans. **Description:** Producing building materials and handling of engineering project development through green policy is developing serious traction. The Nigerian areas is rich in natural resources that managed well can lend to advanced architecture design and development. Community developed products include a hay block which developed with clay leads to excellent design development, sustainable and low impact to the regions ecostructure. The area has problems with rapid deforestation, this is one solution recently developed that will assist development and weather protections. **Citation;** www.designboom.com/architecture/robertbezeau-plastic-bottle-village-panama-04-24- 2019/?utm_source=designboom+daily&utm_medium=email&u tm_campaign=robert+bezeau+builds
Lead Organisation(s)	Osi Joe Touching Lives Initiative
Contact	www.osijoetouchinglives.com



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Contribution Official Name	**Mainstreaming Natural Capital Accounting for Climate Change Policy**
Summary	**Objective:** Nature-based solutions (NBS) which help protect, sustainably manage and restore ecosystems in support of climate change mitigation and adaptation will be key to tackling climate change. However, countries need credible and dependable data on the environment and economy in order to create effective, sustainable nature-based solutions for climate change. The System of Environmental-Economic Accounting (SEEA) was developed to provide a framework to measure the links between the environment and economic and societal well-being. By bringing together environmental and economic data, the SEEA provides a measurement framework that enables policy analyses, and an understanding of the economic pressures and drivers behind climate change. **Description:** The SEEA was adopted in 2012 by the United Nations Statistical Commission as the only international statistical standard for measuring the environment and its relationship with the economy. It is a statistical framework that brings together economic and environmental information to measure the condition of the environment, the contribution of the environment to the economy and the impact of the economy on the environment, in a structured accounting framework, in both physical and monetary terms. Several countries have recognized the value of the SEEA for understanding effective NBS for climate change and have implemented SEEA accounts such as land, ecosystem extent, and carbon storage and sequestration accounts. SEEA accounts can be used to conduct scenario modeling, enabling policies that account for externalities and an understanding of potential trade-offs, and promote effective NBS for climate change. The flexibility and modular framework of the SEEA means that it can support several NBS themes, including those related to ecosystem preservation and restoration, conservation of wetlands, treatment of soil erosion, prevention of desertification, biodiversity protection, climate compatible agriculture and food systems regenerating ecosystems through protected areas.
Lead Organisation(s)	UN Committee of Experts on Environmental-Economic Accounting (UNCEEA)
Contact	seea@un.org

Contribution Official Name	**Accelerating Action within the Food System: Investing in Capability and Research for Measurement and Mitigation of Agricultural Greenhouse Gases**
Summary	**Objective:** Addressing the global food system is necessarily a multi-pronged effort requiring actions to improve agricultural production efficiency, increased research investment to develop cost-effective mitigation options, reduced food loss and waste in supply chains, preventing deforestation, amongst others. In light of the considerations outlined above, New Zealand plans to scale up targeted investments in areas of critical importance to improving the sustainability of the global food system. **Description:** New Zealand will make targeted investments to strengthen developing countries ability to monitor agricultural greenhouse gases to accelerate the development of mitigation strategies, improve transparency, gain greater access to climate finance, and improve the climate benefits resulting from development and other investment. In addition, New Zealand will work with partners to mobilise further investment in agricultural mitigation research in key areas, e.g. livestock methane. These investments can bring a transformational impact and can directly address key barriers and improve the enabling environments for large-scale adoption and diffusion of technologies and practices to enhance global climate ambition.
Lead Organisation(s)	New Zealand, the Global Research Alliance on Agricultural Greenhouse Gases and its partners

Contribution Official Name	**Fishing for Climate Resilience: Empowering Vulnerable, Fisheries Dependent Communities adopt Ecosystem-Based-Adaptation Measures to Secure Food and Livelihoods**
Summary	**Objective:** Strengthening the adaptive capacity of vulnerable coastal communities across Indonesia, the Philippines and Micronesia by introducing Ecosystem-based Adaptation (EbA) as a standard practice in policymaking and management within the small-scale fisheries sector. **Description:** Targeted trainings and behavior adoption measures will help fishing dependent communities and local and national administrations develop the capacity to design and implement community-based fisheries management plans, policies and tools that restore and sustain small-scale fisheries, conserve critical ecosystems and sustain ecosystem services essential to coastal protection, food security and livelihoods. Rare and partners will enhance social resilience and climate literacy within local communities by ensuring their direct participation in climate change vulnerability assessments (CCVA) and the subsequent development of climate-smart fisheries management plans. The project will strengthen the ecological resilience of target areas by establishing community-managed fishing grounds and "no-take" zones. Results of CCVAs and other assessments will be used to mainstream locally appropriate climate change solutions into government policies and plans at the local, subnational and national levels. Local leaders who pledge to support and advance EbA practices will be connected through a platform for sharing ideas on improving ecological resilience and addressing climate change through sustainable fishing. To scale globally, Rare together with the Global Island Partnership will launch a global working group on resilience and coastal fisheries.
Participants*	Rare, FAO, Micronesia Conservation Trust and the Global Island Partnership
Lead Organisation(s)	Rare
Contact**	Angel Uson; auson@rare.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Sustainable Rice Landscapes Initiative**
Summary	**Objective:** The Sustainable Rice Landscapes Initiative (SRLI) aims at increasing the resource use efficiency and reduce climate change and other environmental impacts through the sustainable transformation of rice-based landscapes. **Description:** SRLI provides a vehicle to deliver massive GHG emissions reductions through NBS, while achieving a broad set of co-benefits across multiple geographies and issue areas. With a starting focus in south-east Asia, key countries include Thailand and Vietnam. Showcasing both impacts already on the ground, alongside the opportunity for scale up over the coming years would be of major significance and relevance for the NBS aspects of the Climate Action Summit. SRLI delivers solutions in countries and specific rice growing landscapes in several ways : (i) Policy and planning by enhancing National Government Policy and Institutional Development for sustainable rice, (ii) On-ground Management and Production Practices in Addressing on-farm and off-farm landscape-level needs and linkages (e.g. technical farming training and new farming methods) and (iii) Market-based instruments supporting sustainable value chains, maximising productivity/economic margins, ensuring efficient market and pricing, addressing post-harvest food loss.
Lead Organisation(s)	The World Business Council for Sustainable Development (WBCSD) UN Environment, FAO, The Sustainable Rice Platform (SRP), The German Agency for International Cooperation (GIZ), The International Rice Research Institute (IRRI)
Contact	WBCSD: Tony Siantonas siantonas@wbcsd.org; GIZ: Matthias Bickel, Matthias.bickel@giz.de; SRP: Wyn Ellias ellisw@un.org; IRRI Ole Sander b.sander@irri.org; FAO: Beau Damen beau.damen@fao.org; Max Zieren zieren@un.org (UN Environment)

Contribution Official Name	**One Planet Business for Biodiversity (OP2B)**
Summary	**Objective:** The One Planet Business for Biodiversity (OP2B) provides the needed business coalition of companies with strategic agriculture footprint committed to preserving biodiversity and to drive transformational change through concrete actions within their supply chains. The ambition of the coalition is to advance innovative business and nature-based solutions for biodiversity, and to leverage the emergence of a new consumer consensus. The coalition focuses on a triple agenda for business, governments and finance. It will serve as a unique multi-stakeholder interface to promote the adaptation of financial tools, government and multilateral incentives as well as positive policies and regulations to trigger private sector transformation. **Description:** OP2B members believe collaborative action is instrumental to shift land use and agricultural practices, and to have a positive impact on biodiversity and ecological services they depend on. The coalition identified the most impactful levers to protect and nurture biodiversity and built an ambition framework with common commitments structured around three focus areas: 1. Scale up regenerative agriculture practices 2. Provide a more diversified product portfolio to consumers 3. Support the protection and restoration of high value ecosystems – including forests. Participating companies will align behind specific commitments, and implementation and impact will be rigorously monitored. OP2B is currently in the process of developing membership rules and other key documents to be finalized in September 2019.
Participants*	Danone (France); Balbo Group (Brazil); Barry Callebaut (Switzerland); Firmenich (Switzerland); Google (USA); Jacobs Douwe Egberts (The Netherlands); Kellogg's (USA); Kering (France); Mars (USA); L'Oréal (France); Loblaws (Canada); Migros Tigaret (Turkey); McCain Foods (Canada); Nestlé (Switzerland); Symrise (Germany); Yara (Norway); and Unilever (UK)
Lead Organisation(s)	World Business Council for Sustainable Development (WBCSD) and Danone
Contacts	Emeline Fellus, WBCSD: fellus@wbcsd.org Alice Durand-Réville, Danone : alice.durand-reville@danone.com

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Natural Climate Solutions**
Summary	**Objective:** The Natural Climate Solutions initiative will communicate to policy makers, via the voice of business and also civil society, the opportunity to support 100's of billion of dollars of investment flowing into nature based solutions. The intent is that policy makers will respond by creating a policy environment supportive of both national and international investment flow. **Description:** The initiative proposes to submit a short video (3-5min) featuring leading CEOs from both the demand and supply side of natural climate solutions, NGO representatives and policymakers, emphasising the potential of Nature-based Solutions to remove CO_2. This united voice will raise awareness of the potential, shed some light on the way forward to unlock investments and increase the potential for more ambitious climate plans both for countries and industries. The video will show that a range of stakeholders have engaged with this topic, private sector companies alongside key players in NGOs and governments, bringing several different viewpoints into the private sector's understanding of investing for inclusive development. The aim of the video contribution is to increase the visibility (within the UN community) of the private sector's intent to invest.
Lead Organisation(s)	World Business Council for Sustainable Development (WBCSD)
Contact	Maria Mendiluce, mendiluce@wbcsd.org Christopher Webb, christopher.webb@tnc.org

Contribution Official Name	**Bamboo for Climate Change Mitigation and Adaptation**
Summary	**Objective:** The International Bamboo and Rattan Organisation (INBAR) is a multilateral development organisation which promotes environmentally sustainable development using bamboo and rattan. It is currently made up of 44 Member states, mainly from the Global South. In addition to its Secretariat headquarters in China, INBAR has regional offices in Ecuador, Ethiopia, Ghana and India, and will open a regional office for Central Africa in Cameroon in 2019. **Description:** Bamboos are giant grasses, meaning that their extensive root and rhizome systems can bind soil and allow for annual regrowth after harvesting. Bamboo is included as a key component of Ethiopia's recently approved land management strategy. Similarly, Cameroon has pledged to restore 12 million hectares of degraded land by 2030, and this will include bamboo. Ghana is planning to use bamboo as a means to restore land that has been devastated through unsustainable gold mining. This is particularly important when bamboo's potential to create durable products, is taken into account. Bamboo products are long lasting, recyclable, and can replace a variety of emissions-intensive materials, such as PVC, steel, aluminum and concrete. As bamboos grow throughout the tropics in Africa, Asia and the Americas, they can provide a significant contribution to combatting climate change in the developing world.
Lead Organisation(s)	The International Bamboo and Rattan Organisation (INBAR)

Contribution Official Name	**Large Scale Seaweed Aquaculture for CO_2 Remediation**
Summary	**Objective:** The contribution aims to promote science-based large-scale commercial seaweed mariculture. According to the UN's FAO, present mariculture production of seaweeds is about 30 million tons annually. While 99.9 % of this production takes place in Asia, several reports and papers indicate a great potential for cultivation of marine seaweed biomass globally, at 109 to 1011 tons dry weight per year. At a low carbon content of 20 % of the dry weight, this amounts to a net potential CO_2 turnover of 0.73 to 73 gigatons (109 tons) per year. The seaweed cultivation potential seems to be large in tropical, temperate and sub-arctic regions alike, thus providing an opportunity for a geographically balanced biomass production. **Description:** The contribution is based on marine primary production. Though not a natural system per se, seaweed aquaculture extracts dissolved nutrients and interacts potentially beneficially with the marine ecosystem, providing a substrate for other marine organisms. The contribution will increase climate resilience for the aquaculture industry, in particular in the Western Hemisphere, through diversification. Seaweed mariculture will contribute to offsetting the effects of local, regional and global climate change on agriculture through food production in different seasonal cycles.Global cultivation of seaweeds provides a new, global resource that may be harvested all year round in different regions from the tropical to the polar regions, hence contributing to global food security. Local communities in Northern Europe are looking to seaweed mariculture as a major emerging possibility, both as a livelihood and as a tool to improve the environmental status of the sea, as well as counteracting climate change.
Lead Organisation(s)	SINTEF
Contacts	aleksander.handa@sintef.no

Contribution Official Name	**Agroecology: Making Agriculture Fit for Purpose in an Era of Climate Change**
Summary	**Objective:** Agroecology is an important nature-based solution to the challenge of feeding the world in an era of climate change. ActionAid works with thousands of farmers in more than 30 countries, providing training and support to shift to agroecology, so that smallholder (particularly women smallholder) farmers' food systems and livelihoods are climate-resilient, minimise GHG emissions, and provide multiple socio-economic, gender, just transition, biodiversity, water and health benefits. **Description:** The IPCC Special Report on Climate & Land identified the need for agriculture to adopt agroecological approaches, so that food systems can better cope with climate impacts and reduce emissions. Agroecology reduces GHGs from food production, improves soil carbon storage and strengthens resilience to droughts and floods by replacing the use of synthetic fertilisers used in industrial agriculture, with natural organic matter. The creation of fertilisers burns fossil fuels, causing high CO_2 emissions. Applying fertilisers to soils kills off soil mycorhizzae and biota, converting soil organic matter to CO_2 and losing natural soil fertility. Excess nitrogen fertiliser application also releases the potent GHG N2O. In contrast, agroecological techniques add organic matter to improve natural soil fertility, structure and water carrying capacity of soils. Agroecological soils are slower to dry out, retaining water for crops to grow for many weeks' longer than crops grown with agrochemicals, thus extending growing seasons and yields in the face of drought and rising temperatures caused by climate change. ActionAid trains local partner CBOs to lead training and facilitation in smallholder farming communities, particularly focusing on empowering women farmers. Community members join participatory processes to analyse their local context, develop & implement community-specific plans based on agroecological approaches. They further advocate for increased public investment in support for gender-sensitive resilient agriculture. This approach is relevant and adaptable to every country context, and can be scaled up.
Lead Organisation(s)	ActionAid International
Contact	teresa.anderson@actionaid.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Sustainable Solutions: Ocean Opportunities & Small Island States (SOS-IS)**
Summary	**Objective:** The World Team project's goal is to team-up to play to transform our world by bringing the resources: Time, Energy, Action and Money to demonstrate small scale system solutions on islands. **Description:** The island/ocean demonstration projects and programs are designed for alternative life ecosystems. Restoring mangrove forests is a critical component of addressing our climate crisis, as they are nursery and habitat for so many species, protector of coastal communities and ecosystems from flooding, and carbon sink for the planet. We demo multiple systems on a small scale that are integrated together for an alternative way to grow renewable solutions; in culture, education, transportation, agriculture, energy, policy, law, equality, and how these systems are interdependent. Our goals include building renewable energy microgrids toward energy independence, clean water and power, biodiversity protection, and demonstration of leading technology.
Lead Organisation(s)	World Team Project

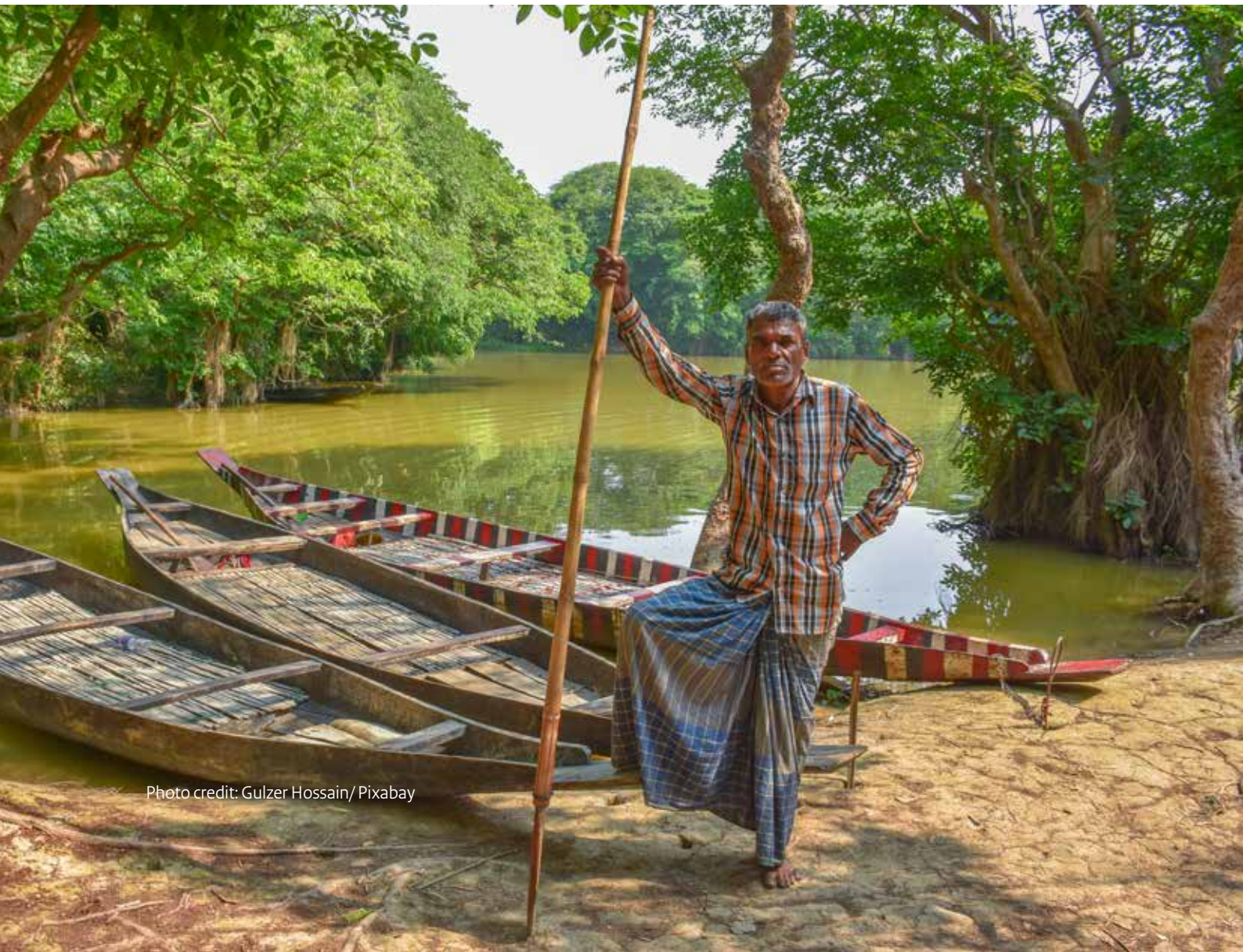

Photo credit: Gulzer Hossain/ Pixabay

Contribution Official Name	**Bringing Concrete to Life - Enhancing Natural Processes on Concrete Based Coastal and Marine Infrastructure (CMI)**
Summary	**Objective:** Ecological enhancement of concrete based CMI can be appropriately implemented into coastal and marine waterfront projects that require an engineered structural solution with a reduced carbon footprint and minimal negative impact on the surrounding environment. Bioenhancing concrete elements induce the growth of ecosystem engineers (Coleman and Williams, 2002) that have profound impacts on the way communities develop and, ultimately, on biodiversity. Many of these ecosystem engineers have an environmental advantage with respect to climate change mitigation and adaptation. **Description:** Concrete accounts for about 70% of coastal and marine construction (Sharma., 2009) and provides a poor substrate for marine flora and fauna due to its chemical properties, usually supporting low biodiversity and a high proportion of non-natives (McManus et al., 2017). As many countries are adopting strategies of "Blue Growth", aimed at supporting sustainable management of marine resources in the maritime sectors, interest in integrating environmentally sensitive multi-function solutions to reduce the ecological and carbon footprint of working waterfronts, ports, marinas, and cities is on the rise. However, in order to achieve a significant ecological uplift globally, there is a need for large scale implementation, calling for practical solutions that can be simply and cost-effectively implemented. The ecological engineering of shorelines schemes is an evolving discipline (Mitsch., 2012) with the aim of building more inclusive, resilient and safe coastal and marine structures for people and nature that maximize benefits for ecosystems, society and economies (Mayer-Pinto et al., 2017). By integrating environmentally sensitive technologies into the planning, design, and construction of urban, coastal, and marine infrastructure, it is possible to harness natural processes for ecological enhancement and improved structural performance, thus bridging development and sustainability. Apart from the highly valuable ecological and structural advantages, these methods also provide economic advantages associated with increased stability, longevity, as well as a reduction in maintenance costs.
Participants*	Shimrit Finkel (Ph.D.), CEO & Chief Scientist, shimrit@econcretetech.com, Israel Ido Sella (Ph.D.), Chief Technology Officer, ido@econcretetech.com, Israel Andrew Rella (Ph.D.), Director of Engineering, andrew@econcrete.us, USA
Lead Organisation(s)	ECOncrete Tech LTD.
Contact**	Shimrit Finkel (Ph.D.), CEO & Chief Scientist, shimrit@econcretetech.com, Israel

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Circulating and Ecological Economy to Achieve the SDGs**
Summary	**Objective:** In order to attain sustainable future, the Government of Japan has continued putting effort into creation of a "Circulating and Ecological Economy"or CEE to reflect the philosophy of the 2030 Agenda and achieveSDGs. It is believed that CEE can be applicable globally based on their regional and local circumstances of natural and human capitalthrough cooperation and partnership with Asian countries and cities,and beyond.The Government of Japan is currently strengthening its effort by starting a new programme andprovidingsupport for local governments to vitalizelocal resources and economies. By connecting regions/ municipalities with experts to find the most effective way to cope with social, environmental, and economic issues, this programme will materialize the principles of CEE. Itwillalsoenable communities to find their unique assets and base their sustainable development plans upon them. **Description:** CEE has emerged through deliberations on the 5th Basic Environment Plan of Japan. It aimsto produce new value chains, complementing regional resources by building broader networks. CEE is composed of natural connections (connections among forests, the countryside, rivers and the sea) and, economic connections (composed of human resources, funds, and others), while making full use of mountainous, agricultural and fishing villages, and cities.
Lead Organisation(s)	Government of Japan
Contact	Hiroaki Odawara: HIROAKI_ODAWARA@env.go.jp

Contribution Official Name	**Ecology Positive Cities Framework**
Summary	**Objective:** To leverage urban development by incentivizing plants on and within buildings through existing green building programs to generate a positive gain of leaf surface area in relation to ecosystems that existed pre-urbanization. **Description:** Over the past 50 years, research has built a clear narrative on how plants provide the relief our cities desperately need. Most importantly, they sequester carbon, create the foundation of biodiversity, enable liveability and resilience in areas of urban density, and provide the bedrock of a healthy environment that ensures undisrupted economies. The framework scales the quantity of plants and their crucial benefits, in dramatic fashion. The framework objectives are: • Identify the ecosystem type that existed on a given development site pre-urbanization using eco-archaeology • Quantify the leaf surface area of the identified ecosystem as a baseline • Create a positive leaf surface area gain while promoting native biodiversity • Infuse plants on and within buildings • Easily integrate into existing green building programs • Develop unique partnerships between key industries • Increase developer profit while maintaining purchaser affordability Although my intent is targeted, the benefits are radiant. From improved social implications to infrastructure functions to economic opportunity to benefits yet to be discovered, plants are the solution to our most colossal problems. The idea is that achieving a positive leaf surface area gain would provide an alternative pathway or subsidized pathway to becoming a certified green building. We have the architectural creatively, technologies and skills to build them into our cities. A comprehensive, action-oriented framework for mobilising plants into our cities is needed. Timing is everything. Now is the time for Ecology Positive Cities.
Contact	Johnlieber17@gmail.com

Contribution Official Name	**Sustainable Management of Morocco's Marine Resources**
Summary	**Objective:** In the framework of this programme, the fishermen were able to identify a significant number of direct and critical threats that urgently affect target species such as poaching of nestlings and osprey eggs whose population is declining within the ZMPNAH, or other critical and permanent threats such as dynamite and copper sulphate fishing, which irreversibly destroys both marketable and non-marketable marine resources as well as its biotope; coupled with the devastating effect of illegal bottom trawling activity in the shallow areas within the National Park. This project aimed to eliminate direct and critical threats, through the strengthening of control and monitoring of species through the involvement of artisanal fishermen. **Description:** The Association of Integrated Resource Management (AGIR) has transformed the concept of traditional sharing into a new, cumulative Sharing Philosophy, which aims first at sharing stakeholder visions, and development in climate action "adaptation", to increase both the resilience of partners, such as those of the "species and ecosystems" targets, a process that began at the local level, then National and currently regional. Implementation of a broad programme of participatory planning following an ecosystem approach, for the benefit of 3,000 artisanal fishermen operating in the Moroccan Mediterranean and in the aforementioned areas.
Lead Organisation(s)	Association of Integrated Resource Management (AGIR)

Contribution Official Name	**Leaders for Ocean-Climate Action**
Summary	**Objective:** To adress the climate and ocean crisis holistically. We share a mid-century vision for a healthy climate and a living ocean; adopt medium-term goals toward this vision; and commit to near-term action. We also commit to help international processes overcome the siloed approach to ocean and climate issues, so that both climate and ocean forums take account of the nexus. In addition, recognizing the role of carbon dioxide in ocean acidification, we call for the development of a new scale of assessing the relative ocean impact of greenhouse gases that supplements or is integrated with the existing scale based on global warming potential, which governments could employ by 2030. **Description:** The ocean plays a dominant role regulating the climate, including by absorbing heat and carbon dioxide. This, however, comes at a heavy cost. Through impacts including ocean warming, deoxygenation, melt, and acidification, climate change is killing ocean ecosystems. The IPCC Special Report on Global Warming of 1.5°C, for example, finds that coral reefs would nearly disappear with 2°C of warming and would decrease 70 to 90 percent with only 1.5°C of warming. In turn, the ocean impacts of climate change are harming human communities and economies. The ocean is a primary food source and economic driver for many communities on the frontlines of climate change. Already, approximately 40 percent of the global population lives within 100 km of the coast - a figure that is rapidly increasing. At the same time, the ocean is a source of climate solutions. From restoring blue carbon ecosystems and developing offshore clean energy to establishing well-enforced marine protected areas and creating climate-ready fisheries, sustainable ocean-based strategies have an important role in climate mitigation and adaptation.
Lead Organisation(s)	Climate Advisers

Contribution Official Name	**Building Resilience to Ocean Risk through Innovative Finance Solutions - Ocean Risk and Resilience Action Alliance**
Summary	**Objective:** To develop a multi-sector Alliance that improves coastal resilience for vulnerable populations, particularly women and girls in SIDS and Coastal Developing Countries by unlocking and incentivising greater private investment and blended finance into coastal natural capital. **Description:** The ocean is changing faster today than at any time in human history. Ocean warming, rising sea levels, acidification, marine pollution and habitat destruction are all creating greater risk and uncertainty, with wide-ranging implications for coastal communities, biodiversity, food security, human health, national security and migration. This will impact the lives and livelihoods of billions of people, especially the poorest and most vulnerable. 800 million people will be at risk of coastal flooding and storm surges by 2050. The United Nations has called for a transformative response by the finance and insurance sectors. Protecting and regenerating natural capital is a critical component of disaster risk management and climate adaptation. Early Alliance projects include investing in modelling and research to better understand ocean risk; products that improve financial resilience and adaptive capacity of coastal communities; incentivising sustainable fishing practices; scaling coral reef insurance and creating mangrove carbon and resilience value credit initiatives. ORRAA will further focus on surfacing and scaling innovative solutions to build coastal resilience in the poorest and most vulnerable communities.
Participants*	Ocean Unite (US/global), AXA XL (UK/global) , Global Resilience Partnership (Sweden/global), TNC (US/global), Rare (US/global), GLISPA (US/global), Willis Towers Watson (UK/global), UNDP, Stockholm Resilience Center (Sweden)
Lead Organisation(s)	Ocean Unite, AXA XL, Global Resilience Partnership
Contacts**	Karen Sack, karen.sack@oceanunite.org Chip Cunliffe, chip.cunliffe@axaxl.com secretariat@oceanriskalliance.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Natural Climate Solutions Alliance of Governments**
Summary	**Objective:** Every country joining the Alliance should commit to: a) Examine how to maximize natural climate solutions when considering how to enhance their nationally determined contributions ("NDC") under the Paris Agreement. b) Develop a quantified national mitigation goal for natural climate solutions in future NDCs. c) Endorse the goal of delivering 30% of global mitigation from NCS by 2030. d) Support a global assessment of progress toward the 30x30 Challenge as part of the Paris Agreement's periodic 'global stocktake'. Alliance members in a position to do so also could commit to: e) Explore the potential of international mitigation partnerships under Article 6 of the Paris Agreement to scale-up implementation of NCS. f) Support transparency in the forest, land, coastal and ocean economy, including through enabling public access to information and contributing to tools and platforms that enable better sustainability decisions. g) Increase and improve access to financing for natural climate solutions. h) Strengthen land-rights and governance for indigenous peoples as sustainable stewards of forests and other natural lands. i) Take action to maximize sustainable ocean-based mitigation and resilience of ocean and coastal ecosystems. **Description:** Through this Alliance, governments can work together to demonstrate increased ambition, exchange best practices, and help to focus attention on this high priority mitigation opportunity.
Lead Organisation(s)	Nature4Climate
Contact	Peter Graham; graham@climateadvisers.com

Contribution Official Name	**From Native Seeds to New Rainforest**
Summary	**Objective:** There is broad agreement that improved land-use management is a key and cost-effective climate solution. The report "Missing Pathways to 1.5°C"1 by the CLARA network assess the mitigation potential through improved land use to 15 Gt of CO_2 per year, where restoring natural forests can contribute to almost half of this. Natural forest restoration also has significant ecological and biodiversity benefits, but this part of the solution has still been largely overlooked. **Description:** Experiences from seed network co- operation in Brazil for re-establishment of natural forest on degraded lands, using native seeds, local knowledge and modern technology can set a new global standard for climate and biodiversity friendly forest restoration. Scaled-up effort is needed to spread the knowledge and establish local seed collection and disbursement systems.
Lead Organisation(s)	Rainforest Foundation Norway
Contacts	Rainforest Foundation : truls.gulowsen@rainforest.no ISA : rodrigojunqueira@socioambiental.org Associação Rede de Sementes do Xingu : danilo.urzedo@sydney.edu.au

Contribution Official Name	**African Forest Landscape Restoration Initiative**
Summary	**Objective:** Protecting nature provides significant opportunities to cut emissions dramatically, preserve our planets ability to support life and sustain communities. Halting the destruction of forests is a cost effective and effective way to reduce greenhouse gas emissions. Forest Landscape Restoration (FLR) can restore ecosystem services and landscape functionality, boost and stabilize land use productivity and enhance resilience to climate change through the restoration of forests and tree cover outside of forests. Improved soil fertility, enhanced agricultural productivity and food security, greater availability and improved quality of water resources, reduced desertification, increased biodiversity, green jobs, economic growth, and increased climate change mitigation and resilience. **Description:** The African Union Development Agency (AUDA)-NEPAD Agency has a network of partners across Africa that could provide a perspective from the African Regional point of view. The AFR100 Secretariat works closely with country focalpoints and Regional Economic Communities (RECs) to provide specific details on what is happening on the ground with regards to FLR which would feed into discussions and value addition.
Lead Organisation(s)	African Forest Landscape Restoration Initiative – www.afr100.org

Contribution Official Name	**A Carbon Removal Commitment for Countries**
Summary	**Objective:** Ahead of the 2019 UN Climate Action Summit, we are inviting companies across all relevant industries to make a public commitment to do the following: 1. Measure and manage carbon removal across your value chain. 2. Collaborate with other companies to address key barriers to scale. 3. Invest in implementing carbon removal solutions. 4. Advocate public policies that incentivise carbon sequestration. A commitment to help scale up carbon removal builds on an ambitious mitigation target (Science Based Targets). Therefore this initiative is additional to existing commitments to cut emissions. **Description:** An initial cohort of companies will be recruited during 2019 and the initial list of signatories will be unveiled at the UN Climate Action Summit in September 2019. Recruitment will then continue on an ongoing basis.
Lead Organisation(s)	UN Global Compact, World Resources Institute, VOLANS
Contacts	Richard Roberts, r.roberts@volans.com James Mulligan, James.Mulligan@wri.org Cynthia Cummis, CCummis@wri.org Heidi Huusko, huusko@unglobalcompact.org

Contribution Official Name	**Building the Business case for Nature-Based Solution for Watersheds**
Summary	**Objective:** This initiative seeks to scale the implementation of nature-based solutions for watersheds at the global scale – each project implemented has the potential for many or all of the co-benefits. This initiative will demonstrate the capacity of natural systems, particularly watersheds, to avert climate change by measuring and communicating stacked water-carbonbenefits in a consistent and relevant way. **Description:** Watershed health and ecosystems are increasingly degraded with decreasing capacity to sequester carbon, retain water and sustain agricultural productivity. Scaled implementation of nature-based solutions to restore watershed and ecosystem health has the potential to break and reverse this cycle – with many wider co-benefits including for biodiversity, social wellbeing, and local livelihoods/economic development. However, scaled implementation requires scaled investment. This initiative looks to scale private sector investment by developing a standardized framework to demonstrate and value stacked water and carbon benefits, and map wider co-benefits, associated with nature-based solution projects; and mainstream innovative finance mechanisms.
Lead Organisation(s)	UN Global Compact CEO Water Mandate, Pacific Institute
Contacts	Jason Morrison, UNGC CEO Water Mandate, President, Pacific Institute

Contribution Official Name	**Community Forestry Campaign for Restoring Degraded Lands in Nepal**
Summary	**Objective:** Objective: Community forestry in Nepal is one of the main methods for securing community tenure rights in forest resourc-es within the country, and is simultaneously also one of the main actions being taken for climate adaptation and mitigation. **Description:** Forest management plans formulated by each CFUG and car-ried out according to local contexts include provisions for climate change adaptation, mitigation and disaster risk reduction. This is covered through, for example, natural regeneration of forest for flood control, conservation of ecosystems and biodiversity, and conservation of freshwater. The national forest legislation and community forestry guidelines also include provisions to recognize and ensure community-focussed approaches.
Lead Organisation(s)	FECOFUN Climate Land Ambition and Rights Alliance (CLARA)
Contacts	Dil Raj Khanal, dilcommon@gmail.com

Contribution Official Name	**Titling Indigenous Peoples Lands: Conservation and Sustainable Use**
Summary	**Objective:** In many parts of Central America you see a great overlap between the intact forests and the indigenous peoples territories, as the indigenous peoples have been living in these areas for generations and have fought to defend their territories from outside invasion and overexploitation.Strengthening the indigenous peoples may therefore be the best strategy to ensure a long-term conservation of those natural resources. Forests of the World and MOPAWI are working with two indigenous peoples in Honduras, the Miskitu and Tolupan peoples,to conserve forest ecosystemsthrough a combined focus on land rights, institutional strengtheningand sustainable management of natural resources. **Description:** Land Rights is a key issue, as the indigenous peoples are under a constant pressure from illegal settlers, private landowners and extractive industries which seek to invade their territories and exploit their resources. The authorities are not only neglecting to intervene, but often support the land claims of the invaders within the territories. For this reason it's important to strengthen the indigenous peoples by granting titles to their territories, settling of existing conflicts within the territories and the recognition of their right to self-determination and self-governance.
Lead Organisation(s)	Forests of the World
Contacts	Jakob Kronik, Head of International Cooperation of Forests of the World; jkr@forestsoftheworld.org

Contribution Official Name	**Perverse Incentives for Agri-Business and Deforestation: A Love Affair that Must End**
Summary	**Objective:** Perverse incentives underpin the unsustainable model of soy and beef production, which results in conflicts with Indigenous Peoples and Local Communities (IPLCs), who are violently dispossessed of their lands and forests. IPLCs in Mercosur countries are demanding the immediate removal of perverse incentives and subsidies for agribusiness, and oppose an EU-Mercosur trade agreement that would incentivize the industry further. Policy and financial support must shift towards small-scale and localized agro-ecological food production, community-driven restoration of forests and other ecosystems, and the rights and practices of IPLCs and women. There is also a strong need for a global shift towards plant-based diets, in light of the devastating impacts of large-scale livestock and feedstock production **Description:** Perverse incentives and subsidies provided to agri-business in the high deforestation areas of the Paraguayan Chaco, Brazilian Cerrado and Northern Argentina, harm forests, biodiversity and communities. Such incentives are harmful to biodiversity and contradict the SDGs and other globally-agreed targets. A study by the European Commission shows how between 1990 and 2008, EU imports were responsible for more than a quarter of the global deforestation associated with ruminant livestock production. The EU imported 27.8 million tons of soy from Latin America in 2016, and 250.000 tons of beef from Mercosur countries in 2017. These imports are set to increase with the EU-Mercosur free trade agreement, which will incentivise further deforestation. In 2017, Argentina gave USD27 million to the largest landholders, subsidizing monoculture soy in territories traditionally dedicated to small-scale farming and one of the most deforested areas. The Brazilian National Development Bank provides significant credits for agro-industrial expansion with just three major livestock companies receiving 90% of the support. Cattle ranching in the Chaco region is responsible for deforestation rates of 300,000 ha/year. In eastern Paraguay, export-oriented soybean production covers 67% of all agricultural land.
Participants*	Global Forest Coalition (Netherlands) and Heñoi (Paraguay) Climate Land Ambition and Rights Alliance (CLARA)
Lead Organisation(s)	Global Forest Coalition
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* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Protecting Primary Forests is Essential for a Safe Climate**
Summary	**Objective:** Climate finance for nature-based solutions that focus on primary forest protection and ecological restoration/natural regeneration i.e. through support for rights and livelihoods for communities and Indigenous Peoples directed to non-indus-trial development pathways, support for protected areas of all governance types, payments for ecosystem services etc. Incentives can be shifted away from activities that degrade/fragment/clear primary forests to add to climate finance for activities in support of primary forest protection and ecological restoration. **Description:** Forests store more carbon than is currently in the atmosphere (and more than known oil and coal reserves combined). Forests are therefore a critical component of climate solutions because there is enough carbon in forests that if burned or otherwise released into the atmosphere, it would trigger dangerous warming, even if we eliminate fossil fuel emissions. However, less well known is that primary forests store far more carbon than production forests or plantations (30-70% more than production forests). In addition, as a result of their 'ecosystem integrity' (i.e. the fact that they retain all of their biodiversity, their natural vegetation structure, soil conditions and species composition), primary forest carbon stocks are also the most stable and most resilient forest carbon stocks on the planet, and can keep carbon safely stored for centuries or millennia. Production forests, which by definition have been degraded by timber extraction and fragmented by logging roads, are far more vulnerable to fire, extreme weather, edge effects, conversion to agriculture use etc. which also means their carbon stocks are at far greater risk of loss. The combination of larger carbon stocks and greater stability makes primary forests by far the safest, lowest risk forest carbon investment. It is therefore essential to ensure that climate finance is directed to maintaining primary forests free of disturbance.
Lead Organisation(s)	Wild Heritage Climate Land Ambition and Rights Alliance (CLARA)
Contacts	Cyril Kormos, cyril@wild-heritage.org

Contribution Official Name	**Municipal Natural Asset Management as a Means to Ensure the Viability of Natural Systems**
Summary	**Objective:** The Municipal Natural Assets Initiative (MNAI) team provides scientific, economic and municipal expertise to support local governments in identifying, valuing and accounting for natural assets in their financial planning and asset management programs, and in developing leading-edge, sustainable and climate resilient infrastructure. More specifically, MNAI supports municipalities to integrate natural assets (e.g. floodplain, riparian area) into core asset management and financial processes. This means that natural assets are understood, managed and valued by municipalities in terms of the services that they can provide (e.g. localized or downstream flood management). **Description:** Municipalities play a vital role both in protecting and preserving natural assets and ecosystem services and in providing citizens with core services. MNAI supports municipalities to integrate natural assets (e.g. floodplain, riparian area) into core asset management and financial processes.This means that natural assets are understood, managed and valued by municipalities in terms of the services that they can provide (e.g. localized or downstream flood management).
Lead Organisation(s)	Municipal Natural Assets Initiative (MNAI)
Contacts	Roy Brooke, RoyB@MNAI.CA

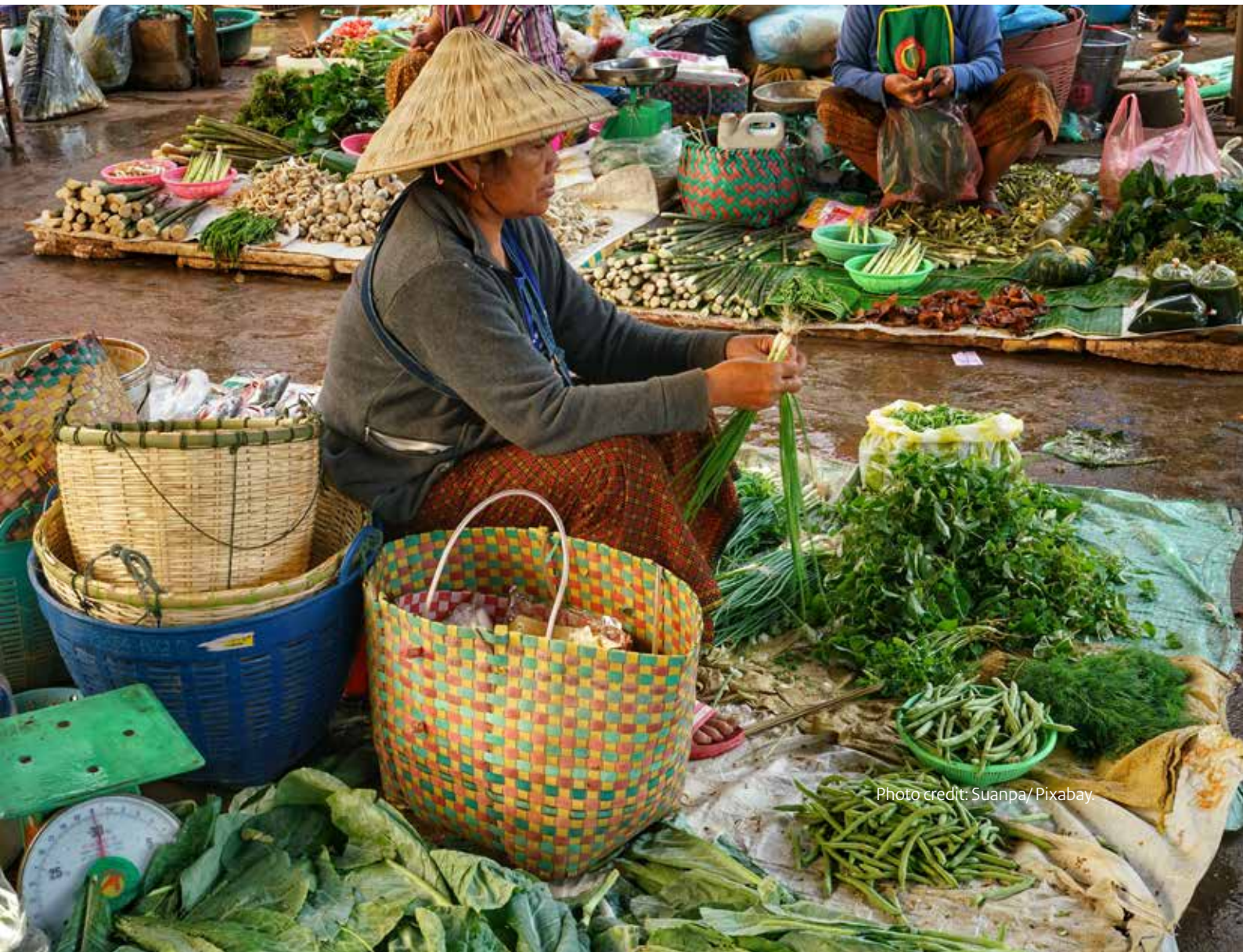


Photo credit: Suanpa/ Pixabay.

Contribution Official Name	**Protecting Half the Earth through a Global Deal for Nature Serves as Key to Nature-Based Climate Solutions**
Summary	**Objective:** The Global Deal for Nature (GDN), launched April 2019, is a time-bound, science-driven plan to save the diversity and abundance of life, avoid catastrophic climate change, and secure essential ecosystem services. It is part of the Nature Needs Half (NNH) global network and movement. Climate models confirm an approaching tipping point: if trends in ecosystem conversion and emissions do not peak by 2030, it will become impossible to remain below 1.50°C. Similarly, if current land conversion rates, overfishing and other threats are not slowed/ halted in 10 years, "points of no return" will manifest for ecosystems and species. Re-greening through large-scale conservation, restoration and improved land/ sea management - Nature-based Solutions (NBS) - are required to transition to a carbon neutral economy and stable climate. Protecting/restoring at least 50% of the Earth's land and sea areas is prerequisite for preventing mass extinctions 5 and directly applicable to mitigating/adapting to climate change. **Description:** To stay below a 1.50°C rise, we need, a rapid transition to 100% renewables by 2050 and a global effort to increase resilience of natural ecosystems, including moratoriums on land conversion by 2030 and a 400 $GtCO_2$ withdrawal from the atmosphere through land and sea restoration7.8. A target to protect half of the Earth by 2030 (30% formally protected areas and additional 20% as Climate Stabilization Areas, CSAs, meeting the criteria for Other Effective Area-based Conservation Measures, OECMs9 will achieve this. The GDN advocates "aggressive" conservation of remaining, intact habitats (terrestrial, freshwater and marine) showing how an expanded global protected areasystem can save the majority of life. Special attention will be given to areas with low anthropogenic disturbance containing vast "carbon repositories". A key GDN target is to maintain 85% forest cover in critical areas e.g. the Amazon, and identify specific areas for CSAs. It pinpoints ecoregions that can achieve protection targets by designation only (e.g. those with significant remaining habitat), and those where restoration is essential. Rewilding, to restore structural and functional complexity of degraded ecosystems while gradually reducing human impact, will be promoted for biodiversity and climate change mitigation/adaptation benefits.
Lead Organisation(s)	NNH Network, RESOLVE, WILD Foundation
Contacts	Vance G Martin; vance@wld.org

Contribution Official Name	**Sustainable Financing Mechanism for Mediterranean Marine Protected Areas**
Summary	**Objective:** The Principality of Monaco has a long-standing commitment to develop and promote MPAs. Among the initiatives undertook, Monaco set regional tools in cooperation with its neighboring countries such as the Pelagos Agreement1,establishingthe Sanctuary for Mediterranean Marine Mammalsin Mediterranean Sea, for which Monaco is the depository. The Principality would be willing to help duplicate some of the tools already implemented in the Mediterranean region to enhance supporttoMPAs in the world. **Description:** Marine Protected Areas (MPAs) are crucial tools for the long-term conservation of the marine environment, including its species, habitats, ecosystems, and the services it provides, with the aim of ensuring sustainable management and sustainable use of marine resources. Their success and sustainability are directly dependent on the size and effective management, including the question of funding (recurrent costs, including staff costs, equipment, monitoring, research, training and management, delimitation of borders, law enforcement, etc.). In many cases around the World, MPAs remain underfunded, resulting in less effective protection.
Lead Organisation(s)	Permanent Mission of the Principality of Monaco

Contribution Official Name	**Marine Educational Area**
Summary	**Objective:** This kind of projects has an invaluable value in educating children about the protection of the environment and the impact of man on the environment. It easily fits into official educational programs by promoting cross-sectoral activities during the school year. The project leads to studying the state of marine biodiversity in a clearly defined coastal area, and the pressures that marine species, ecosystems and habitats face both close to the coast and, by extension, in the open Ocean, Awareness raising on unsustainable practice is also a crucial part of the project. By sensitizing the participating young students inter alia to the impacts of climate change, the project calls upon them to take actions to reduce and mitigate its effects in order to protect marine biodiversity and ecosystem. **Description:** A marine educational area is a small coastal area, managed in a participatory manner by children of a primary school, under the supervision of their teacher and a scientific referent, who define management objectives and set up actions for this area. This concept was first created in 2012, in the Marquesas Islands, as a pedagogical, eco-citizen project aiming at enhancing knowledge and protection of the marine environment by a young audience. This concept was presented at numerous occasions both national, regional and international (i.e. IMPAC3 in 2013, World Parks Congress in 2014, OCEANIA 21 in 2015, National Conference on blue growth in 2015, etc.) creating some interest for its innovative approach.
Lead Organisation(s)	Permanent Mission of the Principality of Monaco

Contribution Official Name	**Develop, Promote and Scale-up Ocean Thermal Energy Conversion (OTEC)**
Summary	**Objective:** The Principality plans to develop, in the years to come, two ocean thermal energy conversion (OTEC) loops to extend the use of this type of energy. These pumps will connect to a water system that will run in pipes supplying several buildings, sometimes farther from the shoreline. This optimizes the efficiency of this technology, reduces costs and allow to supply clean energy to more buildings. The system willbeaparticularly beneficial alternative for buildings currently heated with oil. It will reduce their greenhouse gas emissions of around 80%. For buildingsheated with natural gas, the reduction will be of 25%.This will contribute for about 14% of our overall objective to reached carbon neutrality by 2050. **Description:** Ocean Thermal Energy Conversion (OTEC) is a game-changing technology that leverages the temperature difference in the ocean between cold deep watersand warm surface watersto generate unlimited energy without the use of fossil fuels. It boasts a competitive advantage over alternative sources of electricity production regarding accessibility, predictability, affordability, and emissions .OTEC plants can operate continuously providing abase loadsupply for an electrical power generation system. This technology can also be used to desalinate ocean water and give access to a critical resource (fresh water). OTEC is still considered an emerging technology and could complement renewable energy solutions in National energy mix.
Lead Organisation(s)	Principality of Monaco

Contribution Official Name	**Restore Coastal Wetland to Mitigate and Adapt Climate Change**
Summary	**Objective:** This project aims to restore coastal wetland as a nature based solution so that it can mitigate climate change by storing more carbon and adapt climate change by providing more protection for coastal areas. **Description:** Recent researches show that wetlands, especially coastal wetlands have much higher production than rainforests and therefore efficient in carbon absorbing. If they are not protected, the ecosystems could release huge amounts of greenhouse gases into the atmosphere, potentially jeopardizing the ability of some nations to meet their international climate commitments in the Paris Agreement. Globally, coastal wetlands are found on well over 35 million to 115 million hectares. Much of those wetlands are degraded and in need of restoration. Coastal wetlands such as mangroves, tidal marshes, or seagrass beds can be restored by reducing pollution, replanting lost vegetation and/or by repairing the natural flow of water. Such efforts already happened in many place throughout the world. As shown through cases like the Katrina hurricane in Florida, loss of coastal wetlands worsens the impact of extreme weather events. While during the 2004 Tsunami in Thailand, the villages with better mangrove habitats suffered less costs than those without. Therefore, we would select important areas and restore the wetland ecosystem to both mitigate and adapt climate change.
Participants*	Zhang Yimo, Ren Wenwei, Wang Weikang - China
Lead Organisation(s)	WWF China
Contacts**	Zhang Yimo, ymzhang@wwfchina.org Ren Wenwei, wwren@wwfchina.org Wang Weikang, wkwang@wwfchina.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**UN-REDD Programme's Forest Solutions to the Climate Emergency**
Summary	**Objective:** Reducing emissions from deforestation and forest degradation, plus the sustainable management of forests, and the conservation and enhancement of forest carbon stocks (REDD+), is an essential NBS. Forests, thanks to their unparalleled capacity to absorb and store carbon, have a massive mitigation potential of over 5 $GtCO_2e$ per year. Forests are also one of the fastest, most economically viable, and immediate nature-based solution. **Description:** The UN-REDD Programme is an innovative flagship partnership of FAO, UNDP and UNEP, with 65 partner countries, that supports NBS through forest planning and actions at regional, national and jurisdictional levels. It was the first joint global UN programme on climate change. In response to the UN Secretary-General's call to boost ambition and accelerate actions to fight climate change, UN-REDD will bring the lessons of its first decade of operation to be a catalyst and accelerator of transformation in the forest sector. UN-REDD will support countries to: • Enhance the ambition by further integrating forests and land use into NDCs. • Mobilize financing for REDD+ investments in the forestry and land-use sector by connecting countries with public and private sector partners. • Share the knowledge by creating synergies and accelerating learning, to promote increasing replication and achieve the necessary speed and scale. • Increase capacity and use of cutting-edge tools and technology to monitor, report, and verify forest resources for planning and reporting. • Fulfill the requirements by supporting countries and jurisdictions to meet the entry level conditions of the UNFCCC for result-based payments. • Secure the payments by assisting countries and jurisdictions to meet the requirements, and to access result-based payments for emission reductions. • Reinvest the proceeds by assisting countries to create virtuous cycles of increasing ambitions, increasing results and increasing payments. • Ensure non-carbon co-benefits by maintaining a multi-stakeholder and gender-responsive rights-based approach. UN-REDD contributes directly to advancing multiple SDGs.
Participants*	FAO, UNDP, UNEP, 65 partner countries
Lead Organisation(s)	UN-REDD Programme
Contacts**	Mario Boccucci mario.boccucci@un-redd.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Identifying Strategic Options for Nature-Based Solution in the Land-Use Space: Perspectives on Opportunities for Collaboration with the Food Agriculture Biodiversity Land and Energy (FABLE) Consortium**
Summary	**Objective:** Deep transformations of human systems are necessary to sustainably secure basic human needs and advance human welfare, while managing the risks from global environmental change. To simultaneously progress towards the Sustainable Development Goals (SDGs) and the objectives of the Paris Agreement, the transformation of the food and land-use system is of particular concern. FABLE is a collaborative initiative, operating as part of the Food and Land-Use (FOLU) Coalition. Co-led by the International Institute of Applied Systems Analysis (IIASA) and the Sustainable Development Solutions Network (SDSN), FABLE brings together knowledge institutions from developed and developing countries, providing an analytical and model-aided environment for exploring long-term strategic pathways, which manage the food and land-use systems in an integrated manner. Through its focus on systems-based approaches, FABLE can help advance the understanding how strategic decisions concerned with scaling up nature-based solutions can benefit the overall transformation of food and land-use systems towards sustainability. **Description:** The FABLE Consortium released its 2019 report, entitled Pathways to Sustainable Land-Use and Food Systems. The report delineates a framework for action and presents preliminary pathways from 18 country teams, exploring the feasibility of making food and land-use systems sustainable in each country, while also meeting global goals collectively. Building on these initial results there is an opportunity for dialogue and collaboration with FABLE on the role of nature based solutions to advance sustainable development pathways in the land-use context. For further information on the 2019 report and FABLE in general, please go to: IIASA: http://www.iiasa.ac.at/web/home/about/news/190725-fable-report-launch.html SDSN:http://unsdsn.org/resources/publications/pathways-to-sustainable-land-use-and-food-systems/ FOLU: https://www.foodandlandusecoalition.org/fableconsortium
Lead Organisation(s)	Sustainable Development Solutions Network (SDSN), International Institute for Applied Systems Analysis (IIASA)
Contact	fable@unsdsn.org

Contribution Official Name	**Eco-technological Approach to Erosion and Mass Wasting Assessment and Management**
Summary	**Objective:** Eco-technology (Ecotech) is an emerging approach working with nature by assessing and harnessing the biological systems. The biological protection of soil on slopes, the re-establishment of optimal slope drainage densities and the restoration of native species composition, food webs and ecosystem processes help to achieve long term slope stability and arrest ecological breakdown. Compared with man-made solutions biological systems have been shown to be more resilient, however, it is recommended that geotechnical solutions are considered before engaging ecotechnology. **Description:** The high incidence of shallow landslide or landslip events has meant geotechnical rehabilitation solutions may not always be fiscally or environmentally suitable. Therefore, an ecotech assessment of hillslopes is an additional tool to the conventional geotechnical method of calculating physical forces in order to predict hillslope failure. An empirical ecotech assessment of obvious ecological, arboricultural and hydrological signs offers a comprehensive picture of landslide pre-determining factors including antecedent moisture, slope-creep speed and rates of erosion. Ecotech engineering creates microenvironments for the re-establishment of native species of trees, plants, fungi and microbes, supporting a higher successional eco-systems on hillslopes. Ecotech tools and methods can be used on any hillslope.
Lead Organisation(s)	GeoArb Ltd.
Contacts	Ken Scarlett, info@geoarb.nz Russell Troup, russell.troup@nzta.govt.nz

Contribution Official Name	**A Global Initiative for the Protection of Forest Carbon Sinks and Reservoirs**
Summary	**Objective:** The Initiative will promote global recognition of the critical role of intact forests through (1) commitments from stewards to monitor, manage, and protect them, (2) support from other stakeholders in the form of capacity, technology, and resources. The outcome will be implementation of commitments by High Forest Low Deforestation (HFLD) and other intact forest countries, standing together with IPLC, private sector, and civil society organizations. To enable these commitments, the Initiative will facilitate dialogues, technical support, and cooperation, building on the political will demonstrated by 27 countries through two major recent declarations. **Description:** Maintaining the integrity of intact, primary forests is essential to achieving global climate and sustainable development goals, since these forests: (1) hold immense carbon stocks, totaling nine times annual anthropogenic emissions; (2) absorb over a quarter of global anthropogenic emissions annually; (3) are biodiversity strongholds, vital for adaptation and resilience; and (4) are home to many Indigenous Peoples and Local Communities (IPLC). Long-term protection of intact, natural forest carbon sinks and reservoirs should be key in countries' climate NDCs. However, most climate action focuses only on near-term emission reductions. This contribution aims to promote a prominent role for intact, natural forest sinks in enhanced commitments (e.g. 2020 NDCs) by tropical and boreal governments, in collaboration with IPLC, and supported by innovative, enhanced finance.
Lead Organisation(s)	Wildlife Conservation Society (WCS)
Contact	Cristian Samper, csamper@wcs.org Øyvind Eggen, oyvind@rainforest.no Tim Clairs (contributor), tim.clairs@undp.org

Contribution Official Name	**Rumen Gateway - Mitigation through the Microbiome**
Summary	**Objective:** The initiative is a global, coordinated, cross-disciplinary aiming at understanding and harnessing rumen microbiome function to enable the accelerated development of microbiome-based solutions to support sustainable livestock development that underpins food security, resilient economies, livelihoods of farmers, animal health, and a reduced environmental footprint. **Description:** The Rumen Gateway will greatly advance the development of effective technologies or practices that support sustainable livestock development that contributes to food security while reducing its environmental footprint. Samples needed for the initiative will come from the existing Global Rumen Census data and samples4 and will be used in combination with the Global Research Alliance (GRA) on Agricultural Greenhouse Gases network of scientists to obtain further samples. Aligning with a sequencing partner, next-generation DNA sequencing and metagenomic analysis will be performed, allowing a detailed and unprecedented insight into the biodiversity and predicted function of the rumen microbiota. This will be achieved by generating a gene-based view of global rumen communities, to find abundant, common, and unique functions. Tools such as the GRA scientific network and the culture resource of the Hungate1000 will be used to drive a massive upscaling of detailed microbiological and biochemical characterisation of the key rumen microbiota encoding the most important metabolic pathways identified in the sequencing phase. Assigning and verifying existing biological functions and assigning genes to new functions will allow development of innovative, effective, microbiome-based solutions to reduce GHG emissions from ruminants.
Lead Organisation(s)	Global Research Alliance on Agricultural Greenhouse Gases
Contacts	Hayden.Montgomery@globalresearchalliance.org

Contribution Official Name	**The High Carbon Stock Approach - Putting No Deforestation into Practice**
Summary	**Objective:** A recognized tool by UNEP, the High Carbon Stock Approach (HCSA) is a practical methodology to implement 'no deforestation' commitments. It identifies high carbon stock forests in the humid tropics for conservation, through an integrated land use plan, and allows degraded non-forest land to be developed for agricultural or plantation commodities while ensuring the rights and livelihoods of local peoples are respected. **Description:** The HCS Approach effectively identifies tropical forest areas that are under threat from deforestation due to commodity production expansion. By protecting rather than converting these forest areas, the carbon they contain is conserved along with the other ecosystem services and social values, and the natural system is maintained to allow continued sequestration of carbon from the atmosphere. The HCSA methodology is not country nor commodity specific and is governed by its multi-stakeholder steering group members. Hundreds of companies have committed to HCSA. It is being scaled up to engage most of the palm oil, cocoa and rubbers sectors and adapted to different regions, including with small farmers. It is being implemented in 10 countries in Asia Pacific and Africa, including by local governments in West Papua province and Sabah State, and expanding into Latin America. HCSA is integrated into RSPO's 2018 standard and the French government strategy on importing deforestation. As of August 2019, close to 3 million hectares (ha) of HCSA assessment area was registered, over 575,000 ha of HCS forests was identified for conservation and an additional 7 million ha of tropical forest was prevented from deforestation. This is contributing to a significant reduction in averted GHG emissions and is securing long-term carbon sequestration and storage. Estimates of carbon storage, forest conservation, sustainable land and community use impacts are reported via publicly available peer reviewed HCSA assessments and HCSA's Global Forest Watch Pro platform for monitoring conservation areas will be launched soon.
Participants*	Judy Rodrigues (HCSA ED); Aida Greenbury (HCSA Advisor); Grant Rosoman (HCSA Executive Committee member)
Lead Organisation(s)	It is a multi-stakeholder initiative of worldwide members.
Contact**	Judy Rodrigues judy@highcarbonstock.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Bankable Water Solutions (BWS)**
Summary	**Objective:** WWF is taking action to support the development of a pipeline of investable or 'Bankable Projects' and to ensure that these are delivering against a broader landscape finance plan to support the development of more climate resilient and sustainable landscapes and economies. **Description:** WWF will identify bankable projects, project sponsors and financiers and help fund the initial stages before handing the projects over to the identified sponsors. Since WWF operates at the landscape level, we can create projects at the right scale to attract investors and crucially link the cumulative impacts of these projects. A bankable project (1) in many cases uses blended finance, (2) has a positive environmental impact and (3) generates a positive return for certain stakeholders. We look beyond the individual project and create an enabling environment for investors to support the sustainable financing of landscapes. We have developed relationships with various Financial Institutions, including public and private institutions, banks and investors. We have a chance to ensure that needed investments have a positive impact on nature and water. Instead of us fighting to halt poorly planned infrastructure projects, we can use our expertise and partners to drive more desirable outcomes. WWF has unique experience to catalyse sustainable water investments due to our global reach and on-the-ground work in major river basins, expertise on sustainable finance and green water infrastructure, strong relationships with various funding organisations, and our ability to partner with the private sector and work with government.
Lead Organisation(s)	WWF Freshwater

Contribution Official Name	**Resilient Asian Deltas (RAD) Initiative**
Summary	**Objective:** Objective: WWF's Resilient Asian Deltas (RAD) initiative ahave the objective to stop the continent's six largest delta systems – GangesMeghna-Brahmaputra, Indus, Irrawaddy, Mekong, Pearl and Yangtze – from sinking and shrinking. Targeting common challenges, the initiative has been designed to reduce barriers, respond to opportunities, and scale up solutions that will transform attitudes and approaches to defending deltas. **Description:** RAD emphasizes the importance of 'building with nature' and the benefits nature provides as a key solution for delta and coastal resilience. RAD is built on three pillars, with actions being implemented at both national and regional levels. These levers will support achievement of the RAD milestones and outcomes: • Pillar 1 – Secure political leadership, commitments and action • Pillar 2 – Implement building with nature solutions • Pillar 3 – Mobilize financing to turn vision into actions. RAD aims at ensuring that the long term resilience of Asia's delta systems is improved through unprecedented political and financial investment in 'building with nature', which will protect and restore the natural river and coastal processes that replenish deltas and will keep them – and the societies, economies and nature that depend on them – above the rising seas.
Lead Organisation(s)	WWF China, WWF VietNam, WWF Myanmar, WWF India, WWF Pakistan
Contact**	Shannon Siyao Wang, Shannon.SiyaoWang@wwf.panda.org

Contribution Official Name	**Living European Rivers (LER) Initiative**
Summary	**Objective:** WWF's ambition with the Living European Rivers Initiative is to shift the current water management paradigm in order to halt the degradation of European freshwater ecosystem s and bend the curve of their biodiversity loss trend, so they deliver benefits for nature and people. Only by valuing and protecting the last remaining healthy rivers and wetlands, restoring the freshwater ecosystems damaged through centuries in old Europe, and fully implementing integrated river basin management, will we be able to recover the functions of nature that ensure it continues hosting its biodiversity and providing the services from which we benefit, and the adaptation capacity we need in the face of climate change. Living European Rivers, thus, shall contribute to achieving Paris, Aichi and Sustainable Development Goals. **Description:** Only by valuing and protecting the last remaining healthy rivers and wetlands, restoring the freshwater ecosystems damaged through centuries in old Europe, and fully implementing integrated river basin management, will we be able to recover the functions of nature that ensure it continues hosting its biodiversity and providing the services from which we benefit, and the adaptation capacity we need in the face of climate change. Living European Rivers, thus, shall contribute to achieving Paris, Aichi and Sustainable Development Goals. The main tools to reach the aim of this initiative will be a strong regulatory framework, investments redirected towards conservation and an increased awareness and engagement of European citizens towards water ecosystems.
Lead Organisation(s)	WWF
Contact	Eva Hernández, ehernandez@wwf.es

Contribution Official Name	**Taking Action to Increase Mangrove Habitat 20 by 2030: The Global Mangrove Alliance**
Summary	Mangrove forests deliver invaluable ecosystem services that play a critical role in supporting human well-being through climate regulation, disaster risk reduction, food security, and poverty reduction. Mangroves serve as a protective buffer zone reducing the impacts of climate change by attenuating wave energy and storm surges, adapting to rising sea levels, and stabilizing shorelines. Mangrove ecosystems are also highly efficient carbon sinks, sequestering carbon at significantly higher rates per unit area than terrestrial forests. Yet with 67% of mangroves lost or degraded to date, mangroves are at risk of disappearing altogether. To accelerate a comprehensive global approach to mangrove conservation, restoration, and sustainable use, IUCN, World Wildlife Fund, The Nature Conservancy, Conservation International, and Wetlands International have come together to form the Global Mangrove Alliance (GMA). The GMA brings together NGOs, governments, industry, local communities and funders towards a common goal of halting mangrove degradation and expanding mangrove habitat by 20% by 2030 with defined underlying objectives utilizing mangroves as a nature-based solution to enhance climate adaptation & mitigation, food security, and human well-being. • Climate Adaptation—Increase resilience to impacts of climate change through US$10 billion in new investments • Food Security & Human Wellbeing— Improve the well-being of 10 million people dependent on coastal ecosystems • Climate Mitigation—Eliminate all mangrove-associated greenhouse gas emissions by 2030 • Sustain Biodiversity—Ensure the long-term sustainability of mangrove associated biodiversity globally These targets are accomplished through streams of work including developing novel valuation and financing mechanisms, improving policy and governance, building capacity, and increasing the evidence base to integrate mangroves into mitigation, adaptation, and disaster risk reduction strategies. GMA members connect and coordinate isolated initiatives into a global portfolio that leverages and amplifies best practices, and capitalizes on collective strengths and partnerships to accelerate science-based conservation and restoration of mangroves at an unprecedented scale.
Participants*	IUCN, The Nature Conservancy, World Wildlife Fund, Conservation International, and Wetlands International
Lead Organisation(s)	IUCN, The Nature Conservancy, World Wildlife Fund, Conservation International, and Wetlands International
Contact**	Ali Raza Rizvi, IUCN Global Ecosystem Management Programme Ali.Raza@iucn.org

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**The Nature of the Climate and the Three Global Conditions Framework for Nature-Based Solutions**
Summary	**Objective:** The Three Global Conditions Framework for Nature-Based Solutions approach help ensure that nature -based solutions are planned to provide mutual benefits for nature conservation and climate change adaptation and mitigation. **Description:** The Three Global Conditions for Biodiversity Conservation framework developed by a global team of scientists can guide which nature-based solutions are appropriate in each of those conditions. These conditions have been mapped at both global and national scales. Such a framework would also help to prevent inadvertent harm to biodiversity from well-intended climate actions.The Three Conditions framework is fit for use within existing UN Rio treaty architecture. It lends itself ton being incorporated in Nationally Determined Contributions under the UNFCC and in National Biodiversity Strategies and Action Plans under the Convention on Biological Diversity.
Contact	Harvey Locke, IUCN World Commission on Protected Areas

Contribution Official Name	**Back to Earth - Using Natural Processes to Turn CO_2 Permanently into Rock**
Summary	**Objective:** The CarbFix Project was initiated in 2006 and formalized by four founding partners in 2007. The CarbFix process aims to demonstrate that CO_2 can be economically removed from the atmosphere and stored in favorable rock formations, making use of geology, chemistry and hydrology. **Description:** Reducing man-made CO_2 emissions is one of the main challenges of this century. By capturing CO_2 from variable sources and injecting it into suitable rock formations, carbon can be permanently removed from the atmosphere through natural and environmentally benign processes. Awareness of the potential of this nature-based solution has mostly been confined to scientific circles but pilot testing and demonstration projects are starting to emerge. The rationale of this contribution is to accelerate the research and demonstration of this solution as well as its deployment at scale. This coalition will leverage the experience gained in Iceland through the CarbFix project and of other similar endeavors. The CarbFix process is designed to optimize industrial methods for storing CO_2 in favorable rock formations through • capture of CO_2 from emission points or from the atmosphere • injection of CO_2 charged waters into geological formations that efficiently turn CO_2 into rock through natural processes. A second goal of CarbFix project is to generate the human capital and expertise to apply the advances made in this project in the future.
Contact	Iceland, CarbFix Project

Contribution Official Name	**The Great Green Wall: Growing A World Wonder**
Summary	**Objective:** The conservation of biodiversity in achieving the goals of the Great Green Wall is critical because it underpins the range of ecosystem services which support the livelihoods of local communities, forming the basis for sustainable agriculture. It is a unique example of a nature-based solution to climate change on an unrivalled scale, where people and nature come together to create a lasting legacy for future generations. **Description:** The major cropping regions and degraded grazing lands of the world are the most affected by the loss of soil organic carbon. An estimated 0.68 petagrams of organic carbon can be sequestered back into the soil every year if the current management approaches to recapture the lost carbon are pursued, which could lower the global temperatures by 0.1°C by year 2100 without a decrease in the area under food production. Improved land use and management, such as low-emissions agriculture, agro-forestry and ecosystem conservation and restoration will ensure greater food and water security and build community resilience while sequestering carbon. Such climate-smart land management practices nearly always come with adaptation co-benefits and could under certain circumstances reduce the emissions gap by up to 25%. The conservation of biodiversity in achieving the goals of the Great Green Wall is critical because it underpins the range of ecosystem services which support the livelihoods of local communities, forming the basis for sustainable agriculture. It is a unique example of a nature-based solution to climate change on an unrivalled scale, where people and nature come together to create a lasting legacy for future generations. By 2030, the Great Green Wall aims to sequester 250 million tonnes of carbon, restore 100 million hectares of currently degraded land, and create 10 million jobs for the world's poorest people.
Lead Organisation(s)	African Union Commission, Great Green Wall UN Convention to Combat Desertification (UNCCD)
Contact	Elvis Tangem, elvispault@africa-union.org Juan Carlos Mendoza, jmendoza@unccd.int

Contribution Official Name	**Faith for Forests' Declaration, Campaign and Global Action Agenda**
Summary	**Objective:** The Interfaith Rainforest Initiative was founded to nurture a worldwide movement for the protection of tropical forests, grounded in the values, ethics and moral guidance of faith communities. **Description:** The contribution will build upon the work already underway by IRI to build faith-based movements for forests and climate action in Brazil, Colombia, Democratic Republic of the Congo, Indonesia and Peru. These country programs ensure there is a mechanism in place for the commitments made during the 'Faiths for Forests' campaign to be activated on the ground. The campaign will also link with the mobilizing power of the world's leading interfaith organizations, including Religions for Peace and the World Council of Churches. The commitments by different religions around education, mobilization and advocacy made at the major interfaith commitment event at the Vatican will be documented and tracked. The 'Faiths for Forests' digital communications campaign will center around an online petition as well as a menu of options for how people of faith can take action in their lives to join the movement, which will also have metrics to track engagement from individuals, organizations and religious institutions.
Contact	UNEP

Contribution Official Name	**Facing Climate Change in the Field: Models of Forest and Territorial Governance Working in a Positive Way in Mesoamerica**
Summary	**Objective:** The situation in Mesoamerica contrasts with Asia and Africa, since 65% of 83 million hectares of forests are located on formally recognized indigenous or community lands, a figure much higher than any other region in the world. A wide range of community experiences in this region show the viability of territorial governance as a strategy for mitigating climate change. Achieving reducing emissions derived from deforestation, through a model of integrated management of its natural landscape. With implications for adaptation to climate change, watershed management and food security. This is possible by the implementation of a variety of agroforestry models, based on a set of rules for local use; managed by elected authorities for their communities. **Description:** The Mesoamerican experience confirms that where territorial and cultural rights are recognized for the access and use of natural resources, the beneficiaries and holders of such rights assume the control and management of their forests and the biodiversity contained there by giving rise to a rich variety of forms of conservation and sustainable management of these resources. Indigenous lands in Panama, forestry concessions in Guatemala, Indigenous Territorial Governments in Nicaragua, among others, from their own worldview and enriched by the constant exchange of experiences, they have evolved to face the variety of current pressures on their territories. In summary, these right holders have become central authorities to defend and manage Mesoamerican forests.
Lead Organisation(s)	Mesoamerican Alliance of People and Forests (AMPB)
Contact	Levi Sucre, levisucre@hotmail.com Marvin Sotelo, secretariatecnica@alianzamesoamericana.org

Contribution Official Name	**Coral Reef Rescue - Building ClimateChange Resilient Reefs and Communities**
Summary	**Objective:** Half the world's coral reefs have already been lost, and those that remain are under greater pressure than ever before. Local threats – including pollution, overharvesting and destructive extraction of fish and corals, and unsustainable coastal development – are compounded by global climate change. We're seeing the most rapid decreases in the extent of coral cover ever recorded. Climate models project that, even if the average global temperature rise is limited to 1.5°C, 70-90 percent of tropical coral reefs will be lost by 2100. At 2°C or above, almost none will survive. This is a humanitarian crisis for the hundreds of millions of people who depend on coral reefs for their food, livelihoods and security. We need to address climate change in order to save coral reefs, and linked systems such as mangroves and seagrasses, and all they provide to people and nature. Without strong action to eliminate greenhouse gas emissions and achieve the Paris climate agreement, coral reef conservation interventions will be in vain. But at the same time, we need to focus on protecting those reefs that have the greatest potential to survive in a warming ocean and to act as source reefs from which corals can regenerate in the future. **Description:** This is an ambitious initiative focused on coral reefs (and linked systems) that seeks to create mechanisms and mobilize resources to conserve low vulnerability reefs that have potential to reseed to other regions once the climate has stabilized. The initiative will also connect vulnerable reefs with resilient reefs through an ambitious adaptation plan. In particular, the initiative will be supporting the handful of developing countries where the most climate-resilient reefs are found, and especially the communities on the frontline. Project develops reef productivity and resiliency the around world with a target of safeguarding the food security and livelihoods of over 120 million reefdependent people over the next decade.
Lead Organisation(s)	WWF International and University of Queensland
Contact	Carol Phua, cphua@wwf.org.au Pauli Merriman, pmerriman@wwfint.org Prof. Ove Hoegh-Guldberg, oveh@uq.edu.au

Contribution Official Name	**Blue Lifelines for a Secure Sahel (BLiSS)**
Summary	**Objective:** The Blue Lifelines for a Secure Sahel (BLiSS) Initiative aims to safeguard wetlands, reduce land degradation and build community resilience to climate change in the Sahel. BLiSS will connect interventions for wetlands and drylands to reverse land degradation and build community resilience to climate change in the Sahel. **Description:** Sahelian communities become more secure and resilient to climate change by restored inter-connected wetland and dryland ecosystems and economies. BLiSS will connect interventions for wetlands and drylands to reverse land degradation and build community resilience to climate change in the Sahel. The objectives are to : • Build commitment by Sahelian nations to improve the condition of wetlands to enhance community resilience to climate adaptation • Develop policy and adjustment at Sahel, river basin and national levels, through relevant African Union fora and bottom-up policy processes. • Build access for local wetland communities to knowledge and innovative micro-credit finance, • Develop early-warning systems embedded to enable optimal livelihood choices to be made. By 2030, the goal is to safeguard and restore 20 million hectares of Sahelian wetlands in at least 6 major systems improving adaptive capacity and safety of 10 million people across the Sahel
Lead Organisation(s)	Wetlands International
Contact	Jane Madgwick, CEO Wetlands International Karounga Keita, Regional Director Wetlands International Sahel

Contribution Official Name	**Building With Nature**
Summary	**Objective:** Our mission is to explore the potential of nature to improve the quality of life. Wageningen University and Research co-create and design nature-based solutions together with businesses, governments and NGOs in order to create awareness and evidence base for the potential of NBS to reduce carbon emissions and to increase resilience to climate impact. Nature Based Solutions provide opportunities for climate and biodiversity. **Description:** Wageningen University & Research was involved in several national and international research programmes to create evidence base for the potential of NBS for coastal protection, river management, stream restoration, climate smart forestry, wetland restoration, peat soils, climate smart agriculture, green infrastructure for urban areas. Large scale implementation of NBS will be critical to achieve the Paris Agreement and 2030 Agenda for Sustainable Development (World Water Forum Report, 2018). Although attention to NBS has significantly increased in recent years there is still a lack of awareness, evidence base and financial arrangement to further upscale NBS. For this reason we support the NBS coalition in order to put NBS on top of the international climate agenda.
Lead Organisation(s)	Wageningen University & Research
Contact	Tim van Hattum MSc., tim.vanhattum@wur.nl Dr. Martin Baptist, martin.baptist@wur.nl

Contribution Official Name	**AUT Living Laboratories**
Summary	**Objective:** AUT Living Laboratories is establishing native forest restoration sites, conceived under the NBS framework, in order to fill knowledge gaps for effectively implementing NBS in the unique context of Aotearoa New Zealand. By better understanding the unique characteristics of native species, and the best practice for establishing productive partnerships with Māori landowners, the Living Laboratories will provide the underlying technical knowledge for upscaling NBS at the national scale, especially as part of agroecological farming systems to diversify the landscape. **Description:** The AUT Living Laboratories project aims to create the underlying knowledge base for implementing NBS at the national scale. For its inaugural site, AUT University has partnered with the Māori tribal organisation, Ngāti Whātua Ōrākei - Whai Maia, to co-design an experimental NBS site at Pourewa Creek by integrating ecological science and mātauranga Māori (indigenous knowledge). This partnership will help to adapt the NBS framework to the context of Aotearoa New Zealand, in light of its unique native biodiversity and bicultural context. It also supports the New Zealand Government's objective through its One Billion Trees Programme to plant the right tree on the right site for the right purpose, given that NBS are a vital tool for integrated landscape approach which address the twin crises of climate change and biodiversity loss. Consequently, two focus areas for the research are: 1. optimal planting regimes for speeding up the establishment of old-growth forest trees (tōtara, rimu, matai, tawa, taraire, hinau, maire, kohekohe etc.) to deliver multifunctional forests most effectively; and 2. (productive partnership models for landowners, especially Māori landowners, which integrates mātauranga Māori and illuminates the combined environmental, social and economic benefits of integrating NBS into agricultural systems.
Participants*	Dr David Hall, New Zealand
Lead Organisation(s)	AUT University & Ngāti Whātua Ōrākei - Whai Maia
Contact**	David Hall: david.hall@aut.ac.nz

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Watergen: Bringing Drinking Water to the World**
Summary	**Objective:** Watergen is an international tech company that aims at providing drinking water to people everywhere. **Description:** The global drinking water crisis is perhaps the most dangerous international issue facing human beings today. With the rise in industrialization, overpopulation, and global warming, growing regions on every continent are facing severe drinking water shortages with no additional sources available. Additionally, as urban infrastructure ages throughout the industrialized world, clean drinking water sources are being poisoned as they make their way to the end user. The crisis is fatal: DATA. And while the drinking water for all was given high priority as one of the UN's Sustainable Development goals, it has become clear that world efforts are not moving quickly enough in order to head off the challenge. Yet hope can be found all around us – literally, in the water-rich air that makes up our climate. Watergen, the world leader in Atmospheric Water Generation technology (AWG) is solving the world's drinking water crisis through its revolutionary drinking water-from-air devices. Watergen's internationally patented "genius" heat exchanger effectively mimics the condensation of humidity that naturally takes place in the environment, yet does so at an efficiency and efficacy that is unprecedented. Our internationally patent-protected "genius" technology allows Watergen to produce the best quality water at a rate 5x more efficient than any other player in the market. The result is a fully plug and drink solution that delivers a stable, clean, and immediately deliverable alternate source of drinking water directly to those desperately in need of it around the world.
Lead Organisation(s)	Watergen
Contact	contact@watergenusa.com

Contribution Official Name	**Leveraging NBS for Water Security and Climate Action**
Summary	**Objective:** The initiative aims to leverage water sector investments to scale nature-based solutions for climate action. Water resource managers and service providers, such as drinking water utilities, have long been at the forefront of adopting nature-based solutions. From New York, to Beijing, to Rio, cities are increasingly investing in their "natural infrastructure" – the forests, grasslands, and wetlands in source water areas that sustain the quality and reliability of water supplies. Forest Trends' biennial global surveys over the past 9 years have shown steady growth in these investments, with over $25 billion invested in 2016. Water funds that promote nature-based solutions are experiencing rapid growth, especially in Latin America, with new funds emerging each year in Africa, Asia, and North America. **Description:** This contribution advances approaches to better link climate and water investments in the context of the significant investments that the water sector in Latin America is making in nature-based solutions. Activities will demonstrate the potential of nature-base In terms of transformative impacts, the contribution can demonstrate the extent to which Nationally Determined Contributions can be met through investments made primarily for water security. Second, it generates practical tools that governments, donors, and investors can use to evaluate the climate benefits of nature-based investments. Third, it illuminates pathways by which water and climate finance become mutually supporting: i.e., bilateral climate commitments could provide upfront funding, while water tariffs provide cash flows over time.
Lead Organisation(s)	Forest Trends

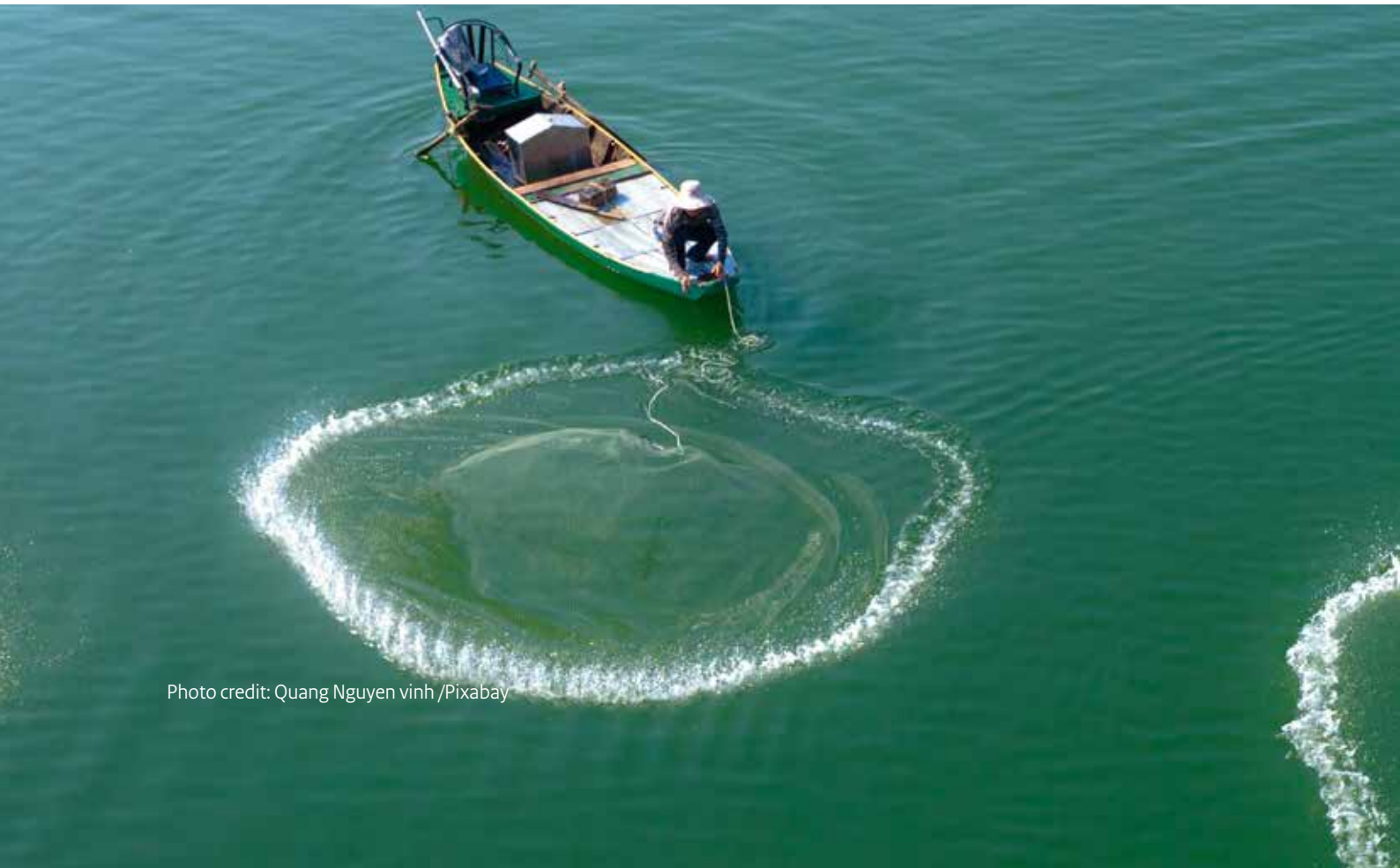
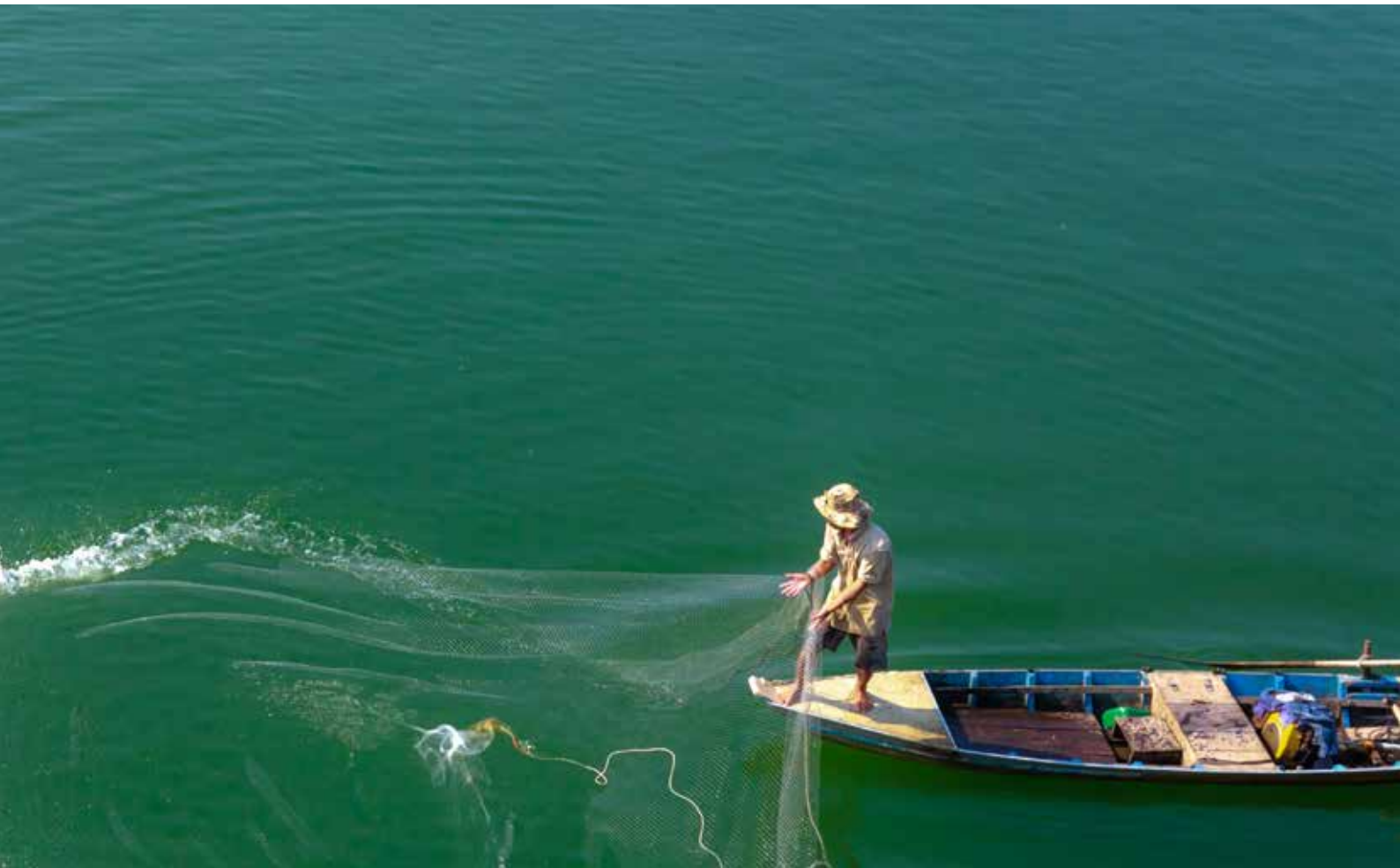


Photo credit: Quang Nguyen vinh /Pixabay

Contribution Official Name	**Amazon Sacred Headwaters Initiative**
Summary	**Objective:** The Amazon Sacred Headwaters Initiative is building a shared vision among indigenous peoples, NGOs, the philanthropic community, social entrepreneurs and governments towards establishing a bi-national protected region – off-limits to industrial scale resource extraction, and governed in accordance with traditional indigenous principles of cooperation and harmony that foster a mutually enhancing human-Earth relationship. **Description:** The Initiative will develop and present a set of strategic frameworks, alternative development pathways, and scenarios for an economic transition to a post-carbon era–aimed at safeguarding the ecological integrity of the Sacred Headwaters region and ensuring human well-being. Concurrent with the consultation and alliance building and based on the results from the regional gatherings including "the shared vision", the Ecological Planning Working Group of the Initiative will conduct research, analysis, and surveys, and facilitate indigenous peoples' own bio-cultural mapping. Mapping provides geospatial analysis for planning at the larger landscape scales. Compiling and integrating layers of information such as pending indigenous lands claims, industrial threats, wildlife corridors, hunting grounds, protection status, ecosystem types and biodiversity data, population data, access routes and fluvial links, helps the alliance establish priorities and make sound governance decisions. By focusing in ensuring the conservation of existing indigenous territories and protected areas in the Amazon, and protecting them from conversion, the initiative directly leverages the Amazon living natural systems as a climate change solution.
Lead Organisation(s)	Fundación Pachamama, CONFENIAE and AIDESEP
Contact	María Belén Paez, belenpaez74@gmail.com



Contribution Official Name	**Launching the Nature-Based Solutions Project Preparation Financing Facility**
Summary	**Objective:** To generate a pipeline of bankable Nature-Based Solution (NBS) projects, the necessary tools, approaches, and capabilities already exist—but, they must be used by those driving infrastructure and development decisions. Currently, cities, infrastructure providers, governments, and financial institutions have yet to integrate NBS into their projects at a meaningful scale. By their own accounts, they lack the capacity and resources to augment the standard infrastructure project preparation process so that NBS can be as rigorously evaluated and carefully designed as conventional infrastructure projects. The World Resources Institute (WRI) is calling for the creation of the Nature-based Solutions Project Preparation Financing Facility (NBS PPF), a multi-donor trust fund to provide the resources and capacity for cities, infrastructure operators, governments, civil society, and development banks to plan and implement bankable NBS. **Description:** Once capitalized, this facility will deploy grants, low-interest loans, and/or technical assistance to support the development and scaling of an NBS project pipeline. It will particularly address early-stage project preparation needs, helping NBS project developers move from planning towards designing for optimal performance, structuring support, and preparing for investment. The PPF is an essential vehicle for governments, infrastructure providers, and development banks to consider NBS as viable options to meet development goals and to increase climate resilience. Responding to the challenge, 60 city mayors from Jakarta to Accra and Quito to Vancouver have committed through the new Cities4Forests platform to harness the power of trees, forests, and green infrastructure to help achieve climate goals, secure clean and stable water supplies, reduce stormwater runoff, improve public health, provide recreation, and other benefits by 2022.
Lead Organisation(s)	World Resources Institute (WRI)

Contribution Official Name	**Global Coordination for Carbon Storage in Collective Territories of Indigenous Peoples and Local Communities in the Equatorial Region**
Summary	**Objective:** The international community urgently needs to reduce deforestation and forest degradation, and improve the sustainable use, conservation and restoration of vital ecosystems. However, evidence to date shows that the closest and best positioned to manage the Earth's carbon-rich lands, especially Indigenous Peoples and local communities, have not yet been integrated into emerging national and global climate solutions. **Description:** Beyond the fact that climate change is already affecting many indigenous territories and that the protection of forests within those territories is fundamental to maintaining climate stability, these forests are more than large carbon reserves. They provide multiple social, cultural and ecological benefits and are a fundamental part of the cultural identity of indigenous peoples and their traditional way of life. Any policy that leads to the conservation of tropical forests from the mitigation of climate change must also take into account the possible social and environmental impacts on people living in these forests. Indigenous peoples and local communities have been excellent stewards of their forested territories, thus preventing large amounts of carbon from being released into the atmosphere, through relatively low intensity land uses, or through the active protection of their borders. Up to 2.5 billion people earn their living in rural economies through the administration of community forests and other community lands that play an essential role in maintaining ecosystem services at the landscape level. The forests of the indigenous territories and of the local communities in Mesoamerica contain at least half (49.3%) of the carbon stored on the surface in the tropical forests of the region. In the Amazon Basin, indigenous territories contain approximately one third (32.8%) of the surface forest carbon stocks. In the case of the Democratic Republic of the Congo (DRC), indigenous territories store 31.4% of surface carbon. The indigenous territories of Indonesia store 36% of the carbon in the surface of the tropical forests of this country.
Lead Organisation(s)	Global Alliance of Territorial Communities
Contact	Tuntiak Katan, tuntiakk@yahoo.com Michel Laforge, laforgenator@gmail.com

Contribution Official Name	**Water Reserves as Ecosystem-Based Adaptation Instruments for Latin America Countries**
Summary	**Objective:** The main goal of the initiative is to allocate to the environment at least 30% of the total water available in Latin American Countries to secure protection of the main freshwater ecosystems and free-flowing rivers, and the benefits that flow from them. **Description:** The Water Reserves initiative can be put into action in any watershed with availability of resources. This framework offers an opportunity to innovate on allocation mechanisms according to each country needs, and then a strong guidance on developing/adjusting regulatory frameworks and building capacities in each country. Water Reserves are the science-based allocation policy instrument that secures hydrological requirements of ecosystems, through the estimation of environmental flows (e-flows). A water reserve consists of a total water volume susceptible to concession in a basin, which is designated for an exclusive function, in this case for ecological protection. This water volume should remain and run freely in the environment and cannot be allocated for any use. Water reserves create a hydrological capacity (buffer) to cushion the impact of extreme events that would affect the hydrological cycle and therefore favor a resilient and less vulnerable management. Water reserves favor ecosystem resilience to adapt to new climate conditions.
Lead Organisation(s)	WWF Mexico

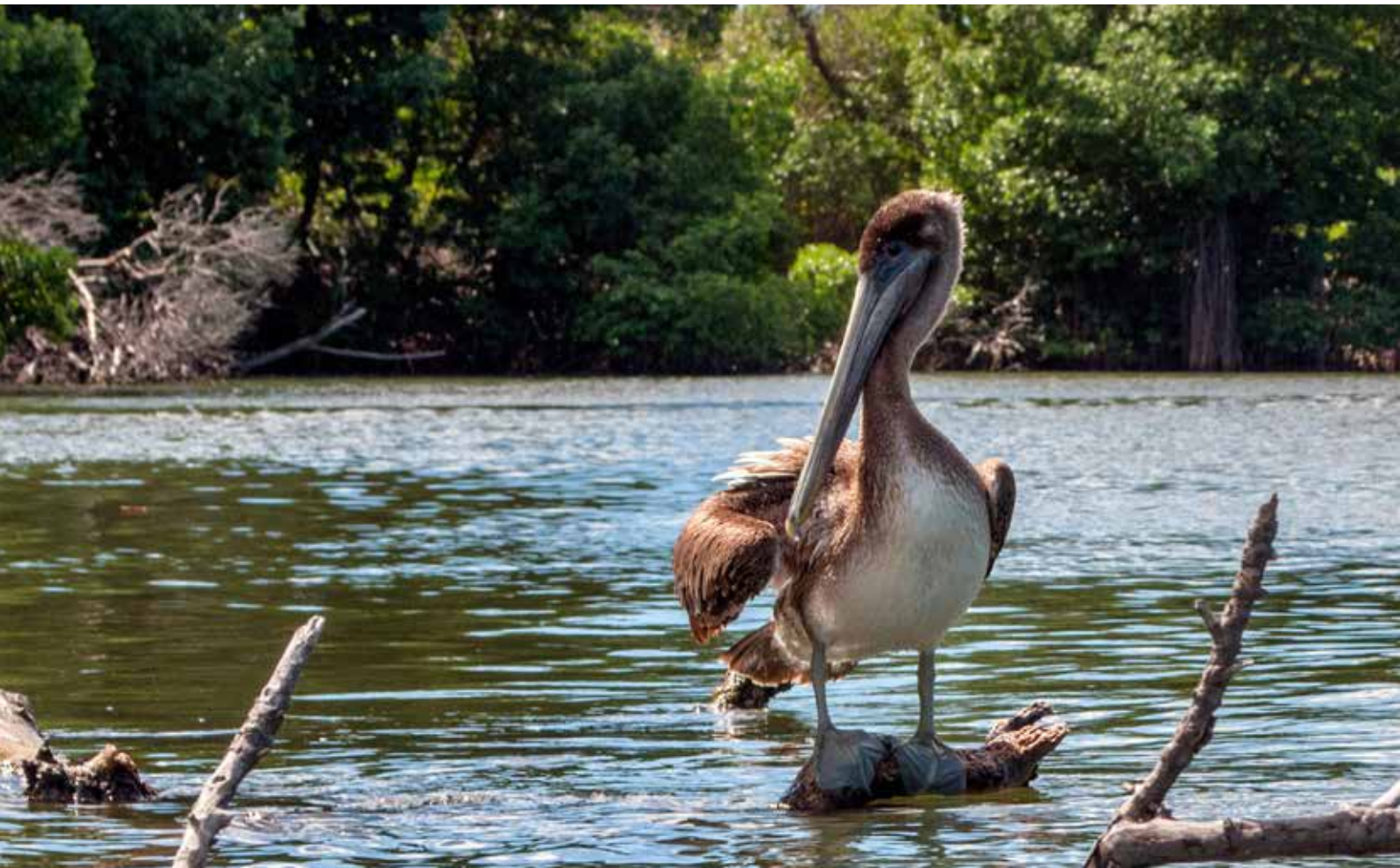
Contribution Official Name	**The Sustainable Open Ocean Farming Imperative for the Future**
Summary	**Objective:** Manna Fish Farms grows fin fish and researches Integrated Multi-trophic Aquaculture (IMTA) with macroalgae (kelp) and shellfish (sea scallops). Manna Fish Farms will use world proven submersible cage and automated feed technologies to grow local, wild species finfish. **Description:** Open Ocean Aquaculture is itself a nature-based solution to drive us towards implementation of the United Nations Sustainable Development Goals. Ocean farming is the future, and Manna Fish Farms, Inc. is currently awaiting permits to operate transparent and sustainable finfish farms in Federal waters off the coasts of New York and Florida. Manna's contribution, and the contribution of the open ocean aquaculture industry, has potential to directly and substantially impact successfully reaching the goals of the United Nations SDGs, particularly in the areas of ending poverty (SDG 1), sustainable communities (SDG 11), responsible production (SDG 12), and life below the water (SDG 14). In more general terms, efficient seafood production ensures food security, good health, and revitalization of working waterfronts, all of which fall squarely within the SDGs.
Lead Organisation(s)	Manna Fish Farms Inc.
Contact	donna@mannafishfarms.com

Contribution Official Name	**TreesCO2, The Global Forest Project: Strength-Based Climate Collaboration**
Summary	**Objective:** The Global Forest Project ("GFP") is a TreesCO2 proposal in collaboration with the UN Nature- Based Solutions Work Stream. The GFP is a strength-based collaborative solution to plant 1,000 trees for each of the world's 1.2 billion youth aged 15-24, exceeding the UN supported goal of one trillion trees, planting youth's future. **Description:** As 15-year-old Canadian twins, we co-founded TreesCO2 to inspire the world to plant trees through action and education. Our launch goal was to plant 1,000 trees and to learn what is involved in growing a forest. This endeavour inspired the idea of 1,000 trees for each of the world's youth. The GFP is inspired by youth's example of unprecedented collaboration, driven by the digital era. Sharing, posting, messaging and retweeting, youth create global impact. Collaboration is the world's best chance to win the race against climate change. The GFP invites all countries, governments, organizations, and individuals to contribute according to their strengths such as forest hosting, financing or human talent. TreesCO2 calls upon global leaders to follow youth's lead and collaborate across geographic, economic, political, religious and language boundaries.
Participants*	Kaitlin and Lauren Grierson, TreesCO2 Team, Canada
Lead Organisation(s)	Trees CO2, www.treesco2.com
Contact**	Kaitlin and Lauren Grierson: treesco2@gmail.com

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

Contribution Official Name	**The REDD+ Acceleration Facility (RAF): Scaling Finance for Tropical Forest Protection**
Summary	**Objective:** The REDD+ Acceleration Facility (RAF) is a new non-profit organization launching in 2019 that will serve as an intermediary that aggregates buyers and sellers of top-quality REDD+ credits. The RAF will help catalyze forest carbon markets alongside a new jurisdictional REDD+ standard in development to guarantee high environmental and social integrity and consistency with UNFCCC decisions, including the Paris Agreement, Warsaw Framework, and Cancun Safeguards. **Description:** The RAF will provide a simple and reputable means for private and public buyers to access jurisdictional REDD+ credits at large scale. RAF will in turn provide forest jurisdictions with a guaranteed source of demand and streamlined access to diverse buyers. Public donor funds will enable RAF to provide jurisdictions with purchase commitments through a guaranteed minimum price. Jurisdictions will also receive additional market upside if the RAF is able to sell credits to private entities above the floor price level. The RAF will also use a variety of contracts, including call/put options, to address market uncertainties facing both buyers and sellers and help unlock transactions during the currently precommercial market. The RAF aims to channel large-scale finance towards the protection and restoration of tropical forests through purchases of high-quality jurisdictional REDD+ credits.
Lead Organisation(s)	Enviromental Defense Fund (EDF)
Contacts	Ruben Lubowski, rlubowski@edf.org Eron Bloomgarden, eron@climateandforest.com



Contribution Official Name	**Produce, Conserve, Include Strategy: Providing Proof of Concept of the Jurisdictional Approach in Mato Grosso, Brazil**
Summary	**Objective:** A jurisdictional initiative, the Produce, Conserve, Include (PCI)strategy, aims to increase productivity while maintaining native vegetation cover and including smallholders and indigenous and traditional populations across Mato Grosso, Brazil. **Description:** In 2018, about 30 million acres of tropical forest were lost. The global community needs innovative, collaborative solutions – such as the jurisdictional approach – to reduce deforestation at scale. The jurisdictional approach encourages companies, government, and local stakeholders to work together to reduce deforestation and create sustainable development at scale. Through collaboration and locally-led approaches, stakeholders within jurisdictions can drive towards sustainable growth while supporting climate mitigation and resilience. Achieving the PCI's goals would prove that enhanced productivity and deforestation reduction are compatible, and position Mato Grosso as a sustainable development leader in the context of a federal government largely averse to sustainability initiatives. To get there, the PCI is supporting strong governance, leveraging financial mechanisms, and supporting corporate supply chain sustainability. The Climate Action Summit offers an excellent opportunity to showcase the PCI's success to date and future implementation plans, effectively bolstering sustainable development and encouraging other regions to follow Mato Grosso's lead.
Lead Organisation(s)	Environmental Defense Fund (EDF)
Contacts	Fernando Sampaio, diretor.pci@gmail.com Stephan Schwartzman, sschwartzman@edf.org

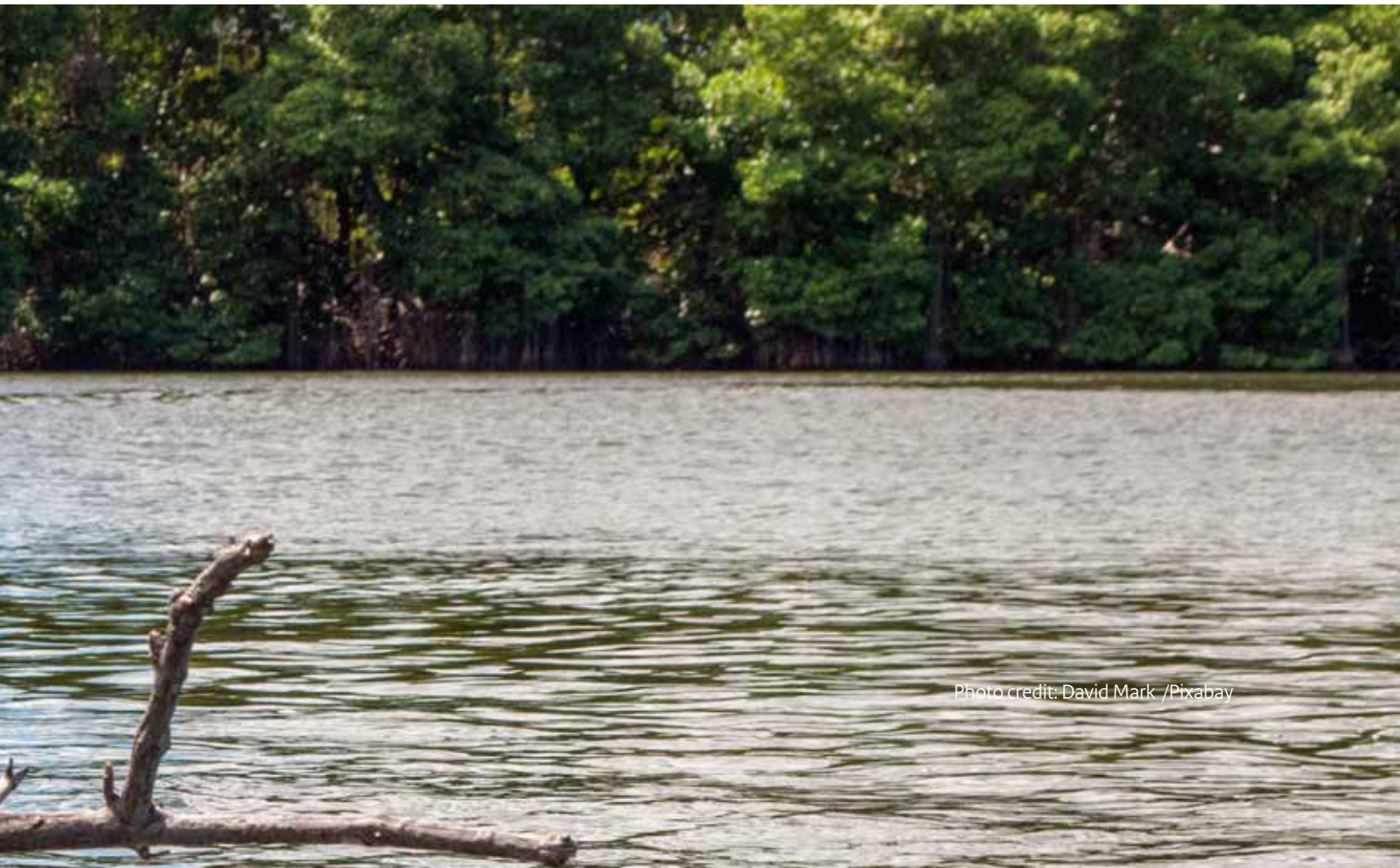


Photo credit: David Mark /Pixabay

Contribution Official Name	**Great Sea Reef Conservation and Climate Resiliency Program**
Summary	**Objective:** This program will support the sustainable management of coastal ecosystems of the Great Sea Reef (GSR) to maintain and enhance the climate resiliency benefits they provide, especially for the benefit of vulnerable coastal communities as well as protection of valuable coastal infrastructure - including for the tourism industry. **Description:** The GSR stretches over 200 kilometers from East to West across the northern reach of the Fiji Islands, and is home to 55% of the population - providing 80% of the country's fish supply and a high proportion of the tourism income. This is the third longest contiguous coral reef system in the Southern Hemisphere, and it is extremely rich in biological diversity, with more than 500 types of reef building corals and more than 700 fish species, extensive seagrass beds feeding grounds for green and hawksbill turtles of the Pacific and 12 threatened species of the IUCN Red List. Unfortunately, this locally vital and globally significant resource is under threat from warming seas, causing rapid coral bleaching, and other climate change threats such as growing storm intensity. Building coastal and reef climate resiliency will also require dealing with pollution from terrestrial landscapes, especially unsustainable agricultural addressing deforestation of upland forests and mangroves).
Lead Organisation(s)	Ministry of Economy, Fiji

Contribution Official Name	**4 Million Trees in 4 years Initiative (4MT4Y)**
Summary	**Objective:** The 4MT4Y aims to mitigate climate change, greenhouse gas emissions, land degradation, loss of biodiversity while creating socio-economic opportunities and food security through the planting of 4 million trees in four years. **Description:** Planting appropriate wood and non-wood tree varieties that reduce soil erosion and siltation, grow well in grasslands, address food security and contribute to enhancing forest and agriculture sectors' GDP contribution. The 4MT4Y project intend to identify and collaborate with development partners, government agencies, communities, civil society organizations, NGO's, industries and corporate organisations in the delivery of project and establish a multi-sectoral steering committee to coordinate and monitor the implementation of the project. The project will create awareness and promote the project to all Fijians, mobilize divisional working groups to implement and supervise tree planting activities, secure funding sources for the implementation of the project and engage schools, youth groups, women groups, resource owning communities, municipalities and farmers in tree planting programs.
Lead Organisation(s)	Ministry of Forestry, Fiji

Contribution Official Name	**The Savusavu Blue Town Model**
Summary	**Objective:** The "Savusavu Blue Town model" specifically target's developing island and coastal communities that lie within these areas of acknowledged Tropical marine biodiversity. **Description:** Savusavu with its incredible natural beauty and diverse community will highlight and showcase Fiji's whole-hearted commitment to COP initiatives to not only reduce carbon emissions, raise climate change awareness (these impacts on our communities and environment), but also implement real and tangible solutions, to preserve and protect our tropical marine biodiversity. The concepts not only provide a robust model for other countries to follow and implement, it will also create greater awareness and significantly drive investment and environmentally sustainable ourism into Fiji and The South Pacific region. Fiji's Blue model town initiative, would provide a valuable and compelling marketing and advertising platform for our strategic partners who have enlisted to work with Fiji to fund and implement the model town concept.
Lead Organisation(s)	Fiji

Contribution Official Name	**Agroforestry: A Nature-Based Solution for Sustainability**
Summary	**Objective:** Climate change is generating uncertainties in agrofood systems framework due to the speed of the change but also the increased appearance of extreme events which is caused by the increase of Green House Gases (GHG) in the atmosphere. Relevant international bodies such as the Global Research alliance, the FAO who establishes the concept of Climate smart agriculture as well as the IPCC (Intergovernmental panel on climate change) in the 1.5 Report identifies agroforestry as a negative emission technology that should be expanded to reduce GHG in the atmosphere. Agroforestry is also able to improve farm resilience due to the increased farm diversification, self-sufficiency and reduced production costs. They can also improve community resilience and enhance mitigation through e.g. carbon sequestration and reduced mineral fertilizer needs as recommends the National adaptation strategies (NAS) and plans (NAP). **Description:** The contribution will evaluate the five types of agroforestry practices: silvo-pasture, silvo-arable, home gardens, riparian buffer strips and forest farming in the different types of land use across the world (table 1) as a tool to mitigate climate change with also links to how these sustainable land use systems are able to increase resilience of farm systems at plot, farm and landscape scale.
Lead Organisation(s)	The Global Research Alliance for GHG
Contact	Maria Rosa Mosquera Losada, mrosa.mosquera.losada@usc.es

Contribution Official Name	**50/50 - The Plan to Save Life on Earth**
Summary	**Objective:** In the past few decades animal populations have declined 60%, one-fifth of the Amazon rainforest has been destroyed, and we've lost half of the world's coral reefs. Only about 15% of 1 the world's lands and 5% of the world's oceans are now formally protected, and over half of the planet has have now been converted from its natural state by human exploitation. We are eroding nature's capacity to provide food, water, and security to billions of people. In response, scientists are calling for a simple solution -- 50/50 -- half of the planet spared from harmful activities and the other half of the planet shared with nature. It's an inspirational plan to restore balance between our ecosystems and our economy, and ensure all life has a chance to flourish. **Description:** 50/50 is the kind of ambitious, clear goal that inspires everyone -- citizens, governments, and businesses -- to take the steps needed to save life on Earth. The paper builds upon several scientific papers for protecting key biodiversity areas and the latest climate science, to conclude a milestone of at least 30% of lands protected by 2030 with an additional 20% of ecosystems in key climate stabilization areas either restored, protected, or under sustainable management.
Lead Organisation(s)	AVAAZ

Contribution Official Name	**Nature Champions Summit April 24 and 25, 2019 in Canada: A Call to Action**
Summary	**Objective:** A coalition of Nature Champions – including international leaders from philanthropy, industry, nongovernmental organizations, United Nations agencies, Indigenous peoples and governments at all levels from around the world – came together at the Nature Champions Summit, held in Montréal, Canada, April 24-25. Nature Champions gathered in Montreal to launch a global mobilization with this Call to Action, jointly committing to take a different, better path that puts nature first. The Nature Champions Summit kicked off a global year-long push to chart an ambitious, shared path toward protecting the world's nature today, to 2020, and beyond. **Description:** The Nature Champions Summit, co-hosted by Canada's Minister of Environment and Climate Change and the Parks Canada Agency, Catherine McKenna, and Canada's Minister of Fisheries, Oceans and the Canadian Coast Guard, Jonathan Wilkinson, kicked off a global year-long push to chart an ambitious, shared path toward protecting the world's nature today, to 2020, and beyond. The Summit focused on several key themes: identifying and overcoming barriers to nature protection; Indigenous partnerships, and incorporating Indigenous wisdom in stewardship activities; the intersection of nature, oceans and climate change; and innovative financing for nature-based solutions. The Summit also provided a platform for participants to showcase commitments and to develop new partnerships for advancing nature protection.
Lead Organisation(s)	The Government of Canada

Contribution Official Name	**Year of the Tree: Seeding the Age of Restoration**
Summary	**Objective:** Year of The Tree: Seeding the Age of Restoration is a call to action for citizens, businesses, governments and organizations to give back to nature. It is a global campaign to reseed trees in the hearts and minds of humanity through outreach, media, and mobilization through people sharing educational resources. **Description:** We plant trees to restore ecosystems and livelihoods whilst increasing protection against the extremes of climate change in multiple regions of the tropical forest belt. This contribution involves both bottom-up and top-down and delivery. A grassroots movement where individuals are empowered to take steps to protect and nourish nature that can be championed by leaders across government, civil society, and business. This contribution consists of two overarching components: awareness raising and resource sharing. 1. Year of The Tree campaign puts our relationship with understanding trees at center stage as a solution for global efforts to combat climate change, provide safe drinking water, alleviate poverty, empower women and meets sustainable development goals. 2. Provide an online platform for information exchange around local species, planting practices, social inclusion, ethical and legal frameworks alongside practical support to turn around deforestation and degradation
Lead Organisation(s)	Tree Sisters
Contact	support@treesisters.org

Contribution Official Name	**Global Coalition of Nature-Based Solutions (NBS) for the Implementation of the Nationally Determined Contributions (NDCs)**
Summary	**Objective:** The Green Climate Fund (GCF) strives to promote the paradigm shift towards low emission and climate-resilient development pathways and support implementation of the Paris Agreement. GCF wishes to propose a global coalition for Nature-Based Solutions (NBS) to support the implementation of countries' NDCs and reach the Sustainable Development Goals (SDGs). **Description:** GCF is in the process of developing an integrated framework for its natural resources and land use sectors, which consist of forest and land use; agriculture and food security; water; and ecosystems and ecosystem services. Within the framework, sector-specific guides are also being developed to help countries and proposal developers to identify the paradigm shift and translate it into impactful projects/programmes. The Coalition will bring together a multitude of partners covering all NBS sectors offering vast arrays of financial instruments, technical solutions and partnerships to implement the NDCs focusing on the NBS targets. The Coalition aims to work at country, regional, biome and global levels to fully achieve the implementation of the NBS-related targets and priorities in the NDCs. GCF is already undertaking a series of highly relevant and useful initiatives to facilitate and operationalize this proposal. GCF is in the process of developing an integrated framework for its natural resources and land use sectors, which consist of forest and land use; agriculture and food security; water; and ecosystems and ecosystem services. Within the framework, sector-specific guides are also being developed to help countries and proposal developers to identify the paradigm shift and translate it into impactful projects/programmes. GCF's Communities of Practice in each sector will enable the operationalization of the framework and sector-specific guides. Additionally, GCF offers countries access to numerous opportunities for technical, financial and knowledge management support. GCF wishes to utilize, contribute to, and benefit from the important momentum of the UN Climate Summit to launch its Global NBS Coalition. Through this Coalition, GCF can build on its role and ability to convene partnerships with countries, public and private sector entities and successfully forge innovative investments for NBS.
Lead Organisation(s)	The Green Climate Fund (GCF)
Contact	info@gcfund.org

Contribution Official Name	**Mobilizing and Empowering Youth on Nature and Climate**
Summary	**Objective:** Youth4Nature is a youth-led, international initiative advocating for nature-based climate solutions which intends to mobilize its network around UN Secretary-General's Climate Summit. It intends to hold political leaders to account on the urgent need to reset our relationship with nature, as well as to mobilize young people around the world to be champions of nature-based solutions by providing a platform to share their stories and build their capacity as advocates. **Description:** Youth4Nature has three core objectives: 1. To mobilize youth to take action and advocate for political leaders to deliver up to 30% of climate solutions needed by 2030 to result from nature-based solutions with a clear vision for the future; 2. To elevate the voices of youth by providing a platform to share their stories and have them be heard; and, 3. To build the capacity of youth to serve as leaders of a "nature for climate" movement. Their message is simple: in the search for solutions to climate change, political leaders cannot forget young people; they cannot forget frontline and marginalized communities; and they cannot forget nature.
Lead Organisation(s)	Youth4Nature
Contact	Marina Melanidis, marina@climateguides.ca

Contribution Official Name	**United Nations University Land Restoration Training Programme**
Summary	**Objective:** The United Nations University Land Restoration Training Programme (UNU-LRT) aims at fighting land degradation and restoring degraded land by strengthening institutional capacity and motivating individuals in developing countries to deal with these issues. **Description:** The mission of UNU-LRT is to train specialists from developing countries to combat land degradation and restore degraded land, and to assist strengthening institutional capacity and gender equality in the field of land restoration and sustainable land management. UNU-LRT works with individuals and partner institutions in Africa and Central Asia that have been identified as playing a significant role in land restoration and sustainable land management in their respective countries. By building up capacities in the field of land restoration and sustainable land management, UNU-LRT concurrently addresses climate change (both mitigation and adaptation), gender equality and human welfare (food security, poverty reduction).
Lead Organisation(s)	Iceland; United Nations University Land Restoration Training Program

Contribution Official Name	**Constructing a Culture of Resilience Against Climate Change for Rural Families in Bolivia**
Summary	**Objective:** This programme will strengthen the capacities of communal and territorial landholders and autonomous local governments, in alliance with other organizations and local institutions. Specifically, it will support the community-based implementation of farming systems adapted to the widely varying conditions of high plateaux, inter-Andean valleys and some lowland areas. **Description:** The project contributes to the improvement of livelihoods in rural areas in Bolivia while protecting the local biodiversity and restoring the ecosystem services through investments in resilient irrigation and water distribution technologies, watershed conservation, recovery and protection of productive soils, afforestation and reforestation of lands with high risk of erosion. The contribution has 3 components : 1. Capacity-building for community adaptation: This component will strengthen community capacities through increased awareness about climate change issues and the development of adaptive capacity. This will be done through information and communication strategies which raise awareness and disseminate knowledge and experiences about indigenous adaptation practices that have potential for replication; 2. Nature-based budgeting and planning: The component will utilize a talking map methodology for a participatory planning of investments, based on community specific natural resource management and climate vulnerabilities; and 3. Climate risk management: This component will help promote better climate risk management at the community and municipality levels, supported by local government investments in the necessary infrastructure, equipment and services.
Lead Organisation(s)	International Fund for Agricultural Development (IFAD)
Contact	Ricci Symons, r.symons@ifad.org Rene Castro, r.castro@ifad.org

Contribution Official Name	**Building on the Success of the Adaptation for Smallholder Agriculture Programme**
Summary	**Objective:** The Adaptation for Smallholder Agriculture Programme (ASAP) channels climate finance to smallholder farmers so they can access the information, tools and technologies that will help build their resilience to climate change. **Description:** ASAP was the springboard which allowed IFAD to utilise this niche to become a world player in smallholder climate finance. ASAP combined the dedicated climate finance, political will, and technical expertise in-house to deliver a climate - focused portfolio that has already benefitted over 2 million poor smallholders, and will help at least another 4 million before the first tranche of ASAP projects is complete. Innovative tools ensure that IFADs entire portfolio is aligned with country priorities while also ensuring that activities are inclusive and target the most exposed and vulnerable stakeholders. IFAD works with the poorest and most vulnerable communities in the world, and given partner governments common but differentiated responsibilities, our work is imperative to ensure improved resilience and a just transition for all. The Fund will continue its effort to mobilise additional climate finance, and direct it where it is needed most.
Lead Organisation(s)	The International Fund for Agricultural Development (IFAD) Adaptation for Smallholder Agriculture Programme (ASAP)
Contact	Margarita Astralaga, m.astralaga@ifad.org

Contribution Official Name	**Natural Climate Solutions Alliance**
Summary	**Objective:** Our vision is to enable Natural Climate Solutions to contribute its full potential to helping deliver the Paris climate goals as well as solutions to some of the world's most pressing and intractable environmental and social challenges, including biodiversity and forest loss, sustainable water management and sustainable community livelihoods. The Natural Climate Solutions (NCS) Alliance is a CEO-led group of stakeholder organisations committed to applying key principles below to the activities in our sphere of influence to deliver NCS with integrity at scale. Our proposed principles are as follows: 1. NCS can and should raise ambition with respect to climate action, enhancing rather than diluting a nation's or a company's contribution to the Paris goals. Carbon credits should be used in conjunction with the GHG emissions mitigation hierarchy. Avoiding, minimizing, and reducing emissions should be prioritized and continue in addition to the use of NCS credits. 2. NCS credits can provide an interim solution for hard to abate emissions, but not a permanent one. For unavoidable emissions, carbon sinks - potentially including natural sinks - will always be needed to achieve net zero. NCS credits should be considered an enabling solution that will support long-term sustainable land use. 3. NCS investments should deliver environmental and social safeguards and benefits in addition to GHG emissions reductions. For example, the preservation of a given forest could enhance a wide variety ecosystem services to the benefit of local and indigenous communities' livelihoods. 4. Sound and verified carbon measurement and accounting methodologies must be applied to ensure high integrity of NCS credits. Emissions reductions and removals must be real, quantifiable and verifiable, with issues of additionality, leakage and permanence appropriately addressed. International exchanges of NCS credits, including by the private sector, should be encouraged under Articles 4-6 of the Paris Agreement, subject to corresponding adjustments in parties' emissions balances to avoid double counting. **Description:** Markets for carbon credits have the potential to mobilize finance for NCS at the scale required quickly. Currently NCS credits are mostly transacted in voluntary carbon markets. In 2016, voluntary buyers paid $191.3 million to compensate for 63.4 million metric tonnes of CO_2 ($MtCO_2e$)[1]. While the voluntary use of emission reduction credits from NCS is growing and desirable, it is not currently and never likely to be sufficient to deliver the Paris goals. For NCS to do this Governments will need to integrate NCS credits into compliance pathways for meeting their climate goals (including Nationally Determined Contributions). This could unlock a scale of NCS investment that far exceeds what could be achieved through voluntary markets alone – AND allow countries to raise their climate ambition and reduce costs by doing so. The Natural Climate Solutions Alliance will work across a wide range of stakeholder groups to unlock this opportunity and deliver the wide range of co-benefits this brings for the environment and society.
Participants*	Businesses, NGOs, Expert organisations
Lead Organisation(s)	World Economic Forum, World Business Council for Sustainable Development, Nature4Climate
Contact	emily.farnworth@weforum.org

[1] https://www.forest-trends.org/publications/unlocking-potential/

Contribution Official Name	**Securing Rights to Secure Nature-Based Solutions to Climate Change**
Summary	**Objective:** The Global Call to Action on Indigenous and Community Land Rights aims to double the area of land recognized as owned or controlled by indigenous peoples and local communities by 2020. To eradicate hunger, fight climate change, and build a world of justice where human rights are protected for all. **Description:** The main advocacy agenda of indigenous peoples in these processes are the respect, protection and fulfilment of the rights of indigenous peoples as affirmed by the UN Declaration on the Rights of indigenous Peoples; as well as the full and effective participation of indigenous peoples in the development, implementation, monitoring and review process of actions plans and programmes on sustainable development at all levels. The platform has been established to strengthen the knowledge, technologies, practices, and efforts of local communities and indigenous peoples related to addressing and responding to climate change, to facilitate the exchange of experience and the sharing of best practices and lessons learned on mitigation and adaptation in a holistic and integrated manner and to enhance the engagement of local communities and indigenous peoples in the UNFCCC process.
Lead Organisation(s)	International Indigenous people for Climate Change (IIPFCC) Indigenous Peoples Major Group (IMPG)
Contact	Indigenous Peoples Forum on Climate Change (IIPFCC): Rodion Sulyandziga, rodion@csipn.ru Mina Setra, minasetra@aman.or.id Indigenous Peoples Major Group: Janene Yazzie, janeney@treatycouncil.org Joan Carling, joan@indigenouspeoples-sdg.org

Contribution Official Name	**Legal and Sustainable Supply Chains for Tropical Wood and Forest Products**
Summary	**Objective:** The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the sustainable management and conservation of tropical forests and the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests. **Description:** The LSSC programme will provide a suite of targeted activities to promote sustainable tropical forest products and link such products to discerning markets through development of supply chain tracking systems, marketing and communications initiatives. ITTO develops internationally agreed policy guidelines and norms to encourage sustainable forest management (SFM) and sustainable tropical timber industries and trade, assists tropical member countries to adapt such guidelines and norms to local circumstances and to implement them in the field through projects and other activities, collects, analyzes and disseminates data on the production and trade of tropical timber, promotes sustainable tropical timber supply chains and helps develop capacity in tropical forestry.
Lead Organisation(s)	The International Tropical Timber Organization (ITTO)

Contribution Official Name	**Accelerating Adaptation by Spurring a Paradigm Shift in Water Engineering in Indonesia, with Replication in Asia and Globally**
Summary	Governments, city authorities and companies face the challenge to deliver hydraulic infrastructure that provides better services to society as a whole, while enhancing the natural environment and increasing climate resilience. Inclusive, innovative approaches are needed to come up with better and more sustainable solutions for these challenges. Building with Nature (BwN) is a design approach, representing a paradigm shift from minimizing negative impacts to maximizing positive impacts for society and nature. This is achieved by integrating the services that nature provides into engineering design and implementation in an inclusive way. Since 2012, the Indonesian Ministry of Marine Affairs and Fisheries (MMAF), with Wetlands International, local communities and other partners, have together trialled the BwN approach to address erosion linked to mangrove loss, which threatens the land and properties of more than 70,000 people. The program focuses on recreating the conditions for natural mangrove regeneration and transforming the local economy that caused the collapse of mangroves. A small scale trial in one village in 2012 has now grown into a landscape scale multi-sectoral initiative, inspiring potential spin-off in Semarang city and harbour. Considerable progress has been made with the uptake of BwN in Indonesia, replication is already realised in 15 districts in Indonesia. Lessons learned are strongly welcomed by the private and public sector and opportunities exist to embed BwN principles into strategic policies and planning allowing implementation at scale in a wide range of settings from urban to rural, from mountain to coast.
Lead Organisation(s)	Wetlands International
Contact	Femke.Tonneijck@Wetlands.org

Contribution Official Name	**Land-Based Transformative Projects and Programmes (TPP) to Achieve Both Climate Change Adaptation and Mitigation**
Summary	Filling that gap to prepare sound TPPs, the UN Convention to Combat Desertification (UNCCD) is proposing to launch a Project Preparation Support Program to support LDCs and SIDS to prepare projects focused primarily on NBS addressing climate change, land degradation and biodiversity losses. Integrated approaches to climate change, land degradation and biodiversity can further enhance the effectiveness of interventions and avoid the additional costs on LDCs and SIDS imposed by fragmented approaches. During the past year, the UNCCD has been piloting this approach to support countries in developing projects to address land degradation, increasing multiple environmental, social and economic benefits. Implementing TPP is essential to protect, maintain and improve ecosystem services delivery for local livelihoods (food, fodder, fiber, wood and non-timber forest products with high value added) as well as for global benefits due to carbon storage function and water regulation. TPP seeks to generate and sustain fundamental and sustainable positive change, transformation, in the coupled human-environmental system where interventions are targeted.
Lead Organisation(s)	UN Convention to Combat Desertification (UNCCD)

Photo credit: Jay Park/ Pixabay

Contribution Official Name	**Peatlands Rewetting, Restoration and Conservation offers a Low-Cost, Low-Tech, High Impact Nature-Based Solution for Climate Action**
Summary	The Global Peatlands Initiative is a partnership of 28 organizations aiming to reduce global greenhouse gas emissions and save thousands of lives by protecting peatlands, the world's largest terrestrial-soil organic carbon stock. Despite the growing momentum to mobilize governments, international organizations and academia in a targeted effort to protect peatlands, there is still a need for more countries, policy makers and senior level government technical advisors to become aware of the urgency of action to prevent the loss of peatlands to fires, degradation through drainage or disturbance and agricultural conversion. The protection of permafrost and other boreal and temperate peatlands is extremely important, yet has been a somewhat overlooked area for climate action. Global Peatlands Initiative experts have called for a strengthened global exchange, collaboration and commitments by governments and private sector partners to abate the serious threat of peatland drainage and fires to climate change mitigation, human health, biodiversity and sustainable livelihoods. Countries with high peatland emissions should take immediate action to rewet their peatlands as part of their Nationally Determined Contributions (NDCs) as a simple way to reduce carbon emissions. Tackling the challenges of peatland degradation and drainage will require sizeable political will that could be generated through the SG Climate Summit. This call to action could be transformative when combined with support to governments to implement strong peatland policies based on experiences and best practices from countries such as Indonesia and the United Kingdom. Global Peatlands Initiative experts have called for a strengthened global exchange, collaboration and commitments by governments and private sector partners to abate the serious threat of peatland drainage and fires to climate change mitigation, human health, biodiversity and sustainable livelihoods. Peatlands store 30% of all land-based carbon. Protecting this globally significant carbon store can play a crucial part in climate change mitigation efforts.
Lead Organisation(s)	UN Environment Programme
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Contribution Official Name	**Zero Budget Natural Farming as a Nature-Based Solution for Climate Action**
Summary	Agricultural activities are one of the main contributors to human emissions of greenhouse gases accounting for 25% of total emissions due to intensive fertilizer usage and deforestation (IPBES, 2019) and negatively impact well-being of at least 3.2 billion people. Reversing land degradation and improving soil's carbon absorption could provide more than a third of the most cost-effective greenhouse gases mitigation activities needed by 2030 to keep global warming under 20C (IPBES, 2018) while also enhancing food and water security, reviving biodiversity in agricultural landscapes and supporting achievement of the sustainable development goals. Zero Budget Natural Farming (ZBNF) is a scalable model of low-input/high output agriculture that eliminates the use of synthetic external inputs by utilizing local farm-based inputs and regenerates soil health. ZBNF is being implemented by the state government of Andhra Pradesh, which is transitioning 6 million farmers and 8 million hectares to 100% chemical free agricultural practices by 2024, making Andhra Pradesh the first natural farming province in India. Improvements in soil fertility through bio - inoculants, continuous vegetation cover on the farms and reduced tillage result in decreased carbon loss and increased sequestration of carbon in ZBNF soils.
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Contribution Official Name	**PROAmazonia - Utilizing Forest Conservation and Sustainable Production Practices to Address Climate Change and Strengthen Local Livelihoods in Ecuador**
Summary	**Objective:** PROAmazonia is an ambitious, five-year collaborative initiative to transform the agriculture and forestry sectors in the Amazon region to more sustainable management and production practices. It is an inclusive, cross-sectoral and multi-stakeholder initiative seeking a just transition to sustainable land-use practices to significantly reduce deforestation and restore degraded ecosystems, improve the livelihoods of some of the most impoverished communities in Ecuador, and establish viable economic markets for sustainably produced, deforestation-free products. **Description:** Data show that between 1990 and 2000, the average gross annual deforestation was 129,943 ha. per year, for 2000-2008 period it was 108.666 ha per year. In the period 2014-2016 this figure reduced to 94,353 ha per year, thanks to government policies implemented at an early stage1 to address deforestation drivers. For a mega-diverse country like Ecuador, achieving and maintaining these transformations requires a sustained and long-term commitment to sustainable development and actions across all sectors and levels of government. Forest conservation and restoration, recognized as a natural solution to address climate change, are at the heart of PROAmazonia. Project interventions will reduce deforestation in the Amazon region, conserve high value ecosystems and actively restore degraded forest ecosystems. By sustainably improving productivity in existing agricultural and livestock areas, further expansion of the agricultural and livestock frontier into native forests will be avoided, thus reducing deforestation and protecting biodiversity. In addition to timber, forests provide important, high-value products such as seeds, fruits, plants, oils, fibers, fungi, among others, which can be sustainably utilized for medicinal, food, cosmetic and cultural purposes. PROAmazonia enables economic transformation by supporting local entrepreneurial efforts to sustainably develop non-timber forest products, thus increasing the economic value of the forests, while maintaining ecosystem function and diversifying income sources for local communities.
Lead Organisation(s)	Ecuador
Contact	Patricia Serrano Roca, pserrano@proamazonia.org

Contribution Official Name	**Nature-Based Solutions for Water Security**
Summary	The Boticário Group Foundation is an NGO dedicated to nature conservation in Brazil. Since 1991, we have been supporting scientific research on biodiversity conservation and contribution to public policy in the environmental field. We believe that nature is part of the solution for the greatest humanity challenges, such as water scarcity and climate change. More than one decade ago, we have developed a pioneer mechanism of Payment for Environmental Services (PES), Oasis, that covers a governance model and a valuation methodology that can be customized according to each region's environmental and economic characteristics. This is substantial to assure transparency in the distribution of resources among the land owners, which is completely related to the land management and better practices that enable nature conservation, mitigation and adaptation to climate change. Over the last 13 years, we have been supporting different stakeholders to implement PES initiatives, and we have learnt that every project has its own specificity. Recently, new approaches have emerged from discussions involving one of the projects, its expansion and future investment possibilities. In partnership with the local government and the water company, we have conducted an assessment on the best strategies for an attractive Return on Investment (ROI) considering the conservation and restoration of natural areas around the only source of water for more than 80 thousand people that live in the city.
Lead Organisation(s)	Boticário Group Foundation

Contribution Official Name	**BRI International Green Development Coalition (BRIGC)**
Summary	**Objective:** By organizing activities on "Global climate change governance and green transformation", "Green energy and energy efficiency", "Green technology innovation and corporate social responsibility", BRIGC can contribute to Nature Based Solutions and related fields on climate change. **Description:** In May 2017, President Xi Jinping of China announced the establishment of BRIGC in the first Belt and Road Forum for International Cooperation (BRF). In April 2019, BRIGC was official launched during the second BRF. BRIGC is an open, inclusive and voluntary international network which aims to incorporate green development into the Belt and Road Initiative, promote international consensus and collective actions on the development of Green Belt and Road and implement the 2030 Sustainable Development Goals. BRIGC will provide platforms for policy dialogue and communication, knowledge and information, green technology exchange and transfer. By August 2019, BRIGC has more than 130 partners. The organization structure of BRIGC includes Co-Chairs, Advisory Committee, Thematic Partnerships and the Secretariat. The Co-Chairs are comprised of the minister of Ministry of Ecology and Environment of China (MEE) and high-level figures from BRI participating countries and international communities. The Advisory Committee is comprised of representatives from BRI stakeholders. The Secretariat is operated by the Foreign Environmental Cooperation Center of MEE (FECO). Based on the trends of green development on the Belt and Road Initiative, and BRIGC has set up 9 thematic partnerships on climate change, green technology, green finance and investment, etc. BRIGC will organize activities on policy dialogue and exchange, research, pilot projects, and capacity building in the thematic areas.
Participants	Over 130 partners, including the environmental departments of 25 countries (including Angola, Armenia, Cambodia, Cuba, Estonia, Ethiopia, Finland, Gambia, Guatemala, Iran, Israel, Italy, Kenya, Laos, Maldives, Mauritius, Mongolia, Myanmar, Niger, Pakistan, Russia, Singapore, Slovakia, Togo and United Arab Emirates), international organizations (including the United Nations Environment Programme, the United Nations Industrial Development Organization and the United Nations Economic Commission for Europe), research institutions and businesses.
Lead Organisation(s)	Ministry of Ecology and Environment, China
Contact	Mr. ZHOU Jun, Deputy Director, Division of Asian and African Affairs, Department of International Cooperation, Ministry of Ecology and Environment of China, zhou.jun@mee.gov.cn

Contribution Official Name	**Delineating for Ecological Protection to Mitigate and Adapt to Climate Change**
Summary	**Objective:** By delineating ecological protection, promoting land use management, we will protect the most important and environmentally sensitive areas to improve ecosystem carbon sequestration, and in support for the mitigation of climate change mitigation and biodiversity conservation. **Description:** Ecological protection refers to the area that has special importance in ecological functions and must be strictly protected by enforcement within the scope of ecological space. The ecological protection is the bottom line and lifeline for safeguarding and maintaining national ecological security. It usually includes areas with important ecological functions such as biodiversity conservation, soil and water conservation, wind prevention and sand fixation, as well as areas with sensitive and fragile ecological environment such as soil erosion, land desertification and stony desertification. The initiative will call for active implementation of national spatial planning measures, based on scientific research and data, put forward a set of methodologies and guidelines for land use planning including the ecological protection, and promote the use. The initiative will provide capacity-building and technical support for countries and regions planning to launch similar initiatives or to conduct pilot demonstrations, including the exchange of knowledge and information, field visits and seminars. Based on practical experiences, the initiative will continuously improve the methodology and expand its application in different countries and regions to promote the formation of coordinated action in a global sense. The designation of protected areas by ecological protection can achieve a greater ecosystem carbon sequestration by a smaller area and contribute to national self-determined commitments under the Paris Agreement. In China, for example, the preliminary ecological protection covers about 25 percent of the country's land area, but it can protect about 95 percent of rare and endangered species and their habitats, 40 percent of water conservation and flood regulation functions, 32 percent of wind erosion control and 45 percent of above-ground plant biomass.
Participants	The initiative will invite the parties of the UN Convention on Climate Change and the Convention on Biological Diversity, international organizations, non-governmental organizations and the private sector involved in biodiversity conservation. At the same time, great importance is attached to the participation of local communities, local governments and civil society organizations in the formulation and implementation of the initiative.
Lead Organization (s)	Ministry of Ecology and Environment, China
Contact	shengwuchu@mee.gov.cn

Contribution Official Name	**Science & Technology Actions on Nature-Based Solutions for Climate Change**
Summary	**Objective:** The objective of this initiative is to call on the governments, international organizations, NGOs, etc. to jointly strengthen science and technology innovation and cooperation in the areas of nature-based solutions; the science and technology system which is for supporting the implementation, would be established and updated to promote the establishment of institutional environment which is benefit for the implementation nature-based solutions. Scientific and technological cooperation would also be strengthened around the world. **Description:** The identification standards of nature-based solutions would be established; Integrating the achievements of fundamental and technology research in the field of nature-based solutions, calling on countries to increase R&D investment and building the disciplinary knowledge system in this fields; Evaluation methodology of long-term benefits, impacts and potential risk will be established; Establishing an institutional system conducive to the implementation and application of relevant technologies in the field of "natural-based solutions", and strengthening international exchanges and cooperation in relevant fields and share successful experiences through international forums and other means.
Participants	Related universities, research institutions and enterprises
Lead Organisation(s)	Ministry of Science and Technology of China (MOST)
Contact	Xiao'ou Chen, sfs_zyhjc@most.cn

Contribution Official Name	**Initiative of the International Big Science Research Plan: Three Poles Environment and Climate Change**
Summary	**Objective:** The purpose of "initiative of the international big science research plan: three poles environment and climate change" is to promote scientific and technological innovation and cooperation in the world. The integrated design and institutional environment for the collaborative researches of three poles would be established. Meanwhile the supporting conditions for the investigations of three poles environment and climate change are going to be established and improving, and the international cooperation in these fields will be further strengthened. **Description:** Relying on the existing scientific cooperation and dialogue mechanism, and integrating them, an international scientific committee of three poles will be formed. A long-term mechanism is under establishing for the implementation, evaluation and maintenance of a three poles collaborative research program. The prediction system of three poles environment and climate change is going to be built, and the study of its socio-economic impacts in three poles will be strengthened. Forming various cooperation approaches, such as the three poles scientific centre and research summit, so that those stakeholders would contact with each other easily, and the research and practical experience would be shared and exchanged.
Participants	Related universities, research institutions and enterprises
Lead Organisation(s)	Ministry of Science and Technology of China (MOST)
Contact	Xiao'ou Chen, sfs_zyhjc@most.cn

Contribution Official Name	**Global Network for Crop-Livestock Combination and Recycling**
Summary	**Objective:** Global network for crop-livestock combination and recycling (hereinafter referred to as "Global Network") seeks to promote the synergies of comprehensive utilization of waste, copy with climate change, through facilitating the exchange of experience and knowledge. The Global Network also contribute to improving the livelihoods of farmers and herdsmen and getting rid of poverty (SDG Goal1), achieving food security (SDG Goal2), improving environmental sanitation (SDG Goal6), improving agricultural resource use efficiency (SDG Goal12), protecting the agro-ecological environment, stop and reverse land degradation (SDG Goal 15) greenhouse gas emissions reduction and carbon sequestration, and enhance the capacity of natural systems to adapt to climate change. Description: Combination and recycling of crop-livestock system is the key elements for agricultural sustainable development. The main modes of crop-livestock system include: crop-livestock combination and recycling, pasture-livestock combination and recycling, forest-livestock combination and recycling, rice-duck/fish/shrimp/crab farming system, livestock-biogas-fruit/tea/vegetable recycling system, etc. China is currently providing support to implement the combination and recycling of crop-livestock system and has extensive experience in this area to be share with the world through the Global Network. The nature of the Global Network is a voluntary initiative and does not create any legally binding rights or obligations between or among its Members or any other entities under domestic or international law. The activities and modalities of the Global Network: Establishing web platform: Sharing the knowledge, best practices and lessons learnt for the implementation of combination and recycling of crop-livestock systems. Share information through: 1. improved soil carbon, soil health and soil fertility under cropland, grassland, and forest land; 2. improved nutrient use and manure management; 3. improved livestock management systems and productivity.
Participants	All countries and international organizations are welcome to be a member of Global Network.
Lead Organization (s)	Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences (CAAS)
Contact	Yue LI, Institute of Environment and Sustainable Development in Agriculture, CAAS

Contribution Official Name	**Persisting in Water Conservation and Strengthening Water Resources Management**
Summary	**Objective:** Changing the ideas and concepts of water resources management in various countries, which takes water conservation as the premise of water resources development and utilization, raises the awareness of water conservation in the whole society, promotes new technologies and products of water conservation, and develops water-saving industries, in order to promote the construction of water conservation society, and cope with the impact of climate change on water resources system. **Description:** The initiative firstly calls on all countries to take water conservation as a prerequisite for the development and utilization of water resources, increases the water conservation efforts, strengthen the management and total amount control of water resources development and utilization, and promote the optimization and adjustment of regional economic structure and industrial layout. Secondly, it advocates promoting new water conservation technologies, developing water conservation industries, vigorously promoting water conservation in key areas, adopting advanced science and technology to transform traditional irrigation technology and equipment, optimizing the allocation of water resources in irrigation areas, and enhancing comprehensive water conservation capacity. Thirdly, it advocates that all countries should establish a working mechanism of "water conservation priority" in which water management departments should coordinate and cooperate with other departments, so as to promote the implementation of water conservation actions at the national level, improve the water conservation system, perfect the water conservation standards, strengthen the delicacy management of the whole process of water use, as well as establish and improve the water conservation incentive mechanism. Fourthly, all governments should encourage public participation in water conservation, accelerate the establishment of a water-saving multi-governance system, carry out extensive water conservation publicity and education, strengthen water conservation education for students in schools, and encourage the public and all kinds of subjects to actively participate in water conservation actions, in order to establish a water conservation society.
Lead Organisation(s)	Ministry of Water Resources (MWR), China

Contribution Official Name	**Strengthening Protection of Rivers and Lakes, Maintaining Healthiness of Rivers and Lakes**
Summary	**Objective:** The initiative proposes to prohibit the illegal occupation of river and to strengthen the control of the shoreline for protection of river and lakes, restore the capacity of flood discharge and water storage, repair the ecology function, enhance the ability to adapt to climate change and maintain the healthy life by strengthening the protection of the ecological space of rivers and lakes. **Description:** Rivers and lakes are main parts of natural ecosystems and are important carriers of water resources. They are closely related to human beings and play an irreplaceable role in flood control, water supply, power generation, shipping, fisheries, maintaining biodiversity, and regulating climate. For a long time, with the rapid development of the economy and society, human behaviors of occupation and destruction of the river and lake ecological space have occurred from time to time, and the health situation of rivers and lakes is becoming very serious. It is proposed to do a good job from the aspects of strictly prohibiting the invasion and occupation of rivers and lakes and strengthening the control of shoreline. To strengthen the management and to prohibit the unreasonable development and utilization behaviors. It will be strictly forbidden to invade rivers and lakes in any name, occupy and abuse the shoreline indiscriminately, in order to ensure that the ecological space of rivers and lakes is not reduced, recover the ability of flood discharge and water storage, restore the ecology function of rivers and lakes and maintain the stability of river regime and the safety of flood control, water supply, shipping and ecology.
Lead Organization (s)	Ministry of Water Resources (MWR), China

Contribution Official Name	**Constructing Green Small Hydropower Stations (GSHS) with Environment-Friendly, Social Harmony, Standardized-Management and Economical Rationality**
Summary	**Objective:** The proposal is to support and guide governments to promote the construction of green small hydropower stations (GSHS) based on their national conditions and development status. It is needed to construct environment friendly, society harmony, management prescriptively and economically rational GSHS with scientific planning and design, standardize construction management, optimize regulations and operations, rehabilitate ecosystems, innovate institutional mechanisms, and strengthen government supervision. **Description:** Small hydropower is an important water conservancy infrastructure for livelihood and renewable clean energy. By the end of 2018, China had built more than 46,000 small hydropower stations with an installation capacity of nearly 80.43 million kilowatts and an annual power generation of 234.5 billion kilowatt-hours, accounting for about 1/4 hydropower installation capacity and annual power generation of China, respectively. These constructed small hydropower stations (SHS) are of critical importance for providing sufficient electricity to the rural and remote area with none or limited power supply. Furthermore, they are very helpful to promote river governance, ecological improvement, environmental protection, local social and economic development, decarbonization and climate change adaptation. Therefore, the development of GSHS is an important measure to respond to climate change actively and promote the construction of water ecological civilization. Currently, there are still many problems in the planning, design, construction, operation and management of GSHS around the world. The green-oriented development mechanisms for promoting GSHS construction have to be further established. Thus, it is of critical practical importance to accelerate the standardization of international small hydropower construction, carry out research on the techniques and promotion of green small hydropower technology, hold forums and international training courses for promoting the development of small hydropower in relevant countries.
Lead Organisation(s)	Ministry of Water Resources (MWR), China

Contribution Official Name	**Urban and Rural Water Supply with "The Same Source, the Same Quality, the Same Pipe Network, the Same Service"**
Summary	**Objective:** Advocating all countries to promote basic public services equally, making urban and rural water supply more systematic, coordinated and economical, developing water supply projects in rural areas, standardizing rural water supply construction and realizing drinking water supply to both urban and rural areas with the same source, the same quality, the same pipe network and the same service. **Description:** In recent years, China has conscientiously implemented a comprehensive, coordinated and sustainable scientific development concept. In accordance with the basic requirements of coordinating urban and rural development, regional development, economic and social development, and harmonious development of human and nature, the urban-rural dual structure will be gradually eliminated and the urban-rural differences will be narrowed. Through the extension of urban water supply pipe network, interconnection of newly built large scale and existing small water supply projects, China has continuously increased the scale of rural water supply projects, curbed the situation of over-exploitation of groundwater in rural areas. It effectively alleviated the problems of poor water resources allocation, uneven spatial and temporal distribution of water and water shortage in rural areas of China under the background of global climate warming. The "integration of urban and rural water supply" has also promoted the rational allocation and utilization of water resources and effective guarantee of the agricultural irrigation water. It has improved the resilience of agriculture to natural disasters caused by climate change, and has gained huge benefits in droughts and disasters. Meanwhile, rural water supply projects with improved quality have enhanced their resilience to all kinds of extreme weather such as freezing and flooding.
Lead Organization (s)	Ministry of Water Resources (MWR), China

Contribution Official Name	**Global Blue Carbon 10-Year Initiative**
Summary	**Objective:** Blue carbon ecosystems, including mangroves, seagrasses, tidal marshes, seaweeds/cultured algae, play important roles on sequestrating carbon dioxide and its precursors, mitigate the negative effects of sea level rise, maintain marine biodiversity, and sustainably supply food. The conservation, restoration and sustainable use of global blue carbon within 10 years is of great significance for achieving the Paris Agreement and the SDG-14 target by 2030. **Description:** The Global Blue Carbon 10-Year Initiative includes: 1. Comprehensively protecting and effectively managing the global blue carbon ecosystems, reversing the degradation trend, maintaining marine biodiversity, and improving carbon sequestration capacity; 2. Large-scale restoring damaged habitats, significantly increasing the global blue carbon ecosystems' area and carbon sequestration capacity, and improving the ability of coastal communities to adapt to climate change; 3. Using marine primary productivity such as macro-algae to mitigate the effects of climate change in a manner that does not affect food production, and to promote sustainable economic and social development; 4. Systematically accounting for the value of the blue carbon ecosystems, realizing the value of blue carbon ecological products through market mechanisms, and promoting poverty alleviation and sustainable development of the community. The Initiative can be based on the existing blue carbon networks, nations, local communities, youth and indigenous people. It is urgent to develop a global strategy and roadmap, national plans, and financing mechanisms.
Participants	Coastal countries and small island countries such as China, Australia, USA, Indonesia, Fiji, UAE, UNDP, UNEP, FAO, IOC/UNESCO, IUCN, etc.
Leading Organization	Ministry of Natural Resources, China
Contact	Zhao Peng, zp-zp@163.com

Contribution Official Name	**Sea Level Rise and Integrated Coastal Risk Assessment in the Context of Climate Change**
Summary	**Objective:** Sea level rise directly leads to the inundation of coastal lowlands, the degradation of coastal ecosystems and the reduction of coastal defense capacity. It will also result in the intensification of coastal disasters such as storm surges, coastal erosion and coastal city floods, threatening the socioeconomic development of coastal areas. Further promoting the bilateral & multilateral joint research and exchanges as well as cooperation among coastal countries in response to sea level rise and climate change, and actively carrying out multidisciplinary integrated risk assessment and mitigation & adaptation to the natural environment and socio-economic impacts, are of great significance for improving the capacity of marine disaster prevention and mitigation for all coastal countries. **Description:** As one of the major countries which is populous at low altitudes coastal areas, China proposes to deepen cooperation and joint research among coastal countries in the areas of regional climate change, sea level rise and extreme events (strong typhoons, storm surges and huge waves) and promote a series of corresponding social ecosystem impact surveys and risk assessments. It will benefit to reduce risk and vulnerability of high-risk coastal areas, and to improve adaptability and resilience for sea level rise and climate change. At the same time, China appeals to strengthening the construction of platforms on climate change and coastal disaster mitigation, mainly focusing on topics including "integrated coastal risk assessment", "climate change and sea level rise adaptation and mitigation", "best practices on national and regional scale for disaster prevention and mitigation" and so on, which will provide good chances for communications and exchanges among coastal countries. It is also of great importance to enhance personnel exchanges, technical exchanges and training. At the same time, China recommends paying more attention to scientific research and publicizing to the public and decision makers in timely and efficient manners.
Participants	Participants in the recommendation include major global coastal countries and international organizations. The recommendation will be put in to effect among low altitude island countries and coastal countries, and China calls on all parties to participate actively
Leading Organization	Ministry of Natural Resources, China
Contact	Wang Hui, wh_cherry@126.com

Contribution Official Name	**Bringing into Full Play the Function of Marine Carbon Sequestration and Developing Marine Carbon Sequestration Economy**
Summary	**Objective:** The oceans absorb large amounts of carbon dioxide and solidify it, which is larger and longer than forest carbon sinks. Fully exerting the function of ocean carbon sink and developing ocean carbon sink economy are effective ways to solve and control global warming problem based on nature. **Description:** 1. The Initiative include: 2. Protecting Marine Ecology and Improving Carbon Sequestration Capacity of Ecosystems; 3. Comprehensive Monitoring and Forecasting of Marine Ecological Disasters Monitoring; 4. Monitoring of marine atmospheric greenhouse gases in offshore waters; 5. Developing Ocean Carbon Sequestration Economy and Promoting Blue Carbon Development
Leading Organization	Ministry of Natural Resources, China
Contact	Jiang Hua, 649216752@qq.com

Contribution Official Name	**China Business Climate Action Initiative**
Summary	The Paris Agreement proposes to control the global warming by less than 2 °C. In order to further meet the goal of Paris Agreement within the framework of China's Intended Nationally Determined Contributions, we propose initiative to all sectors of society, including enterprises, industrial associations, public welfare organizations environmental protection, research institutions, media etc.: we are calling on industry associations, Chambers of commerce and the federation to lead and drive the whole industrial chain, industrial clusters to realize carbon emission reduction action, green transformation and green innovation. We are calling on enterprises to integrate climate change into their development strategies and corporate social responsibilities, to promote sustainable business models and climate solutions, to drive market, industry and policy trends so as to become climate change models. We propose the following action strategies: 1. Strengthen carbon management and disclosure, and set up GHG emission goals conform to the Paris Agreement; 2. Disseminate and apply renewable energy technologies and promote the use of green electricity and other renewable new energy sources; 3. Spread experience and technology of green manufacturing and low-carbon cycle development, reduce waste emissions; 4. Promote the sustainable development of the upstream and downstream of the industry and build a green supply chain; 5. Improve energy efficiency, reduce energy consumption, and advocate green ecological planning and design; 6. Promote new energy vehicles and other green transportation modes; 7. Advocate the server to create green consumption choices for the public8. Promote carbon markets, carbon trading and green finance.
Participants	This initiative was supported by more than 800,000 companies from China
Leading Organization	10 NGOs including China Green Carbon Foundation, See Foundation, Vanke Foundation etc.
Contact	National Forestry and Grassland Administration 84238916 Zheng Sixian

Contribution Official Name	**"Greening the Motherland,Low-Carbon Action" Tree Planting Activity Initiative**
Summary	Forestry plays an important role in addressing climate change. Forestry action has been involving in global progress of climate change mitigation and adaptation. In the new situation of combating climate change, citizen's participation in afforestation activities has been endowed with the new connotation of mitigating and adapting to climate change, which is the new mission of modern forestry construction in this new era. In order to promote public participation in afforestation, greening the motherland, promoting green and low-carbon development, and further addressing climate change, CGCF create a new way to encourage citizens to donate for forest carbon sequestration to achieve their tree-planting duty. We named it "greening the motherland, low-carbon action". We set up an internet platform for people to finish their tree-planting obligation, also to offset the carbon footprint. This initiative not only helps people to plant trees easily and quickly, but also increases public awareness of global climate change, and low-carbon living.
Participants	Citizens all over China
Leading Organization	China Green Carbon Foundation
Contact	National Forestry and Grassland Administration 84238916 Zheng Sixian

Contribution Official Name	**Initiative on Carbon Neutrality Action through Afforestation**
Summary	The initiative aims to encourage enterprises, organizations or individuals to the calculation of the total amount of GHG directly or indirectly generated within a certain period of time. The GHG emissions mainly refer to the sum of carbon emissions generated by energy and resources consumption during operation including electricity, gas, transportation, etc. The initiative also aims at further donation for Afforestation project to offset the carbon footprints. The CGCF has established a set of technical standards system for forestry carbon projects. Enterprises and organizations were motivated to participate in climate action through donation for afforestation projects.
Participants	More than 57 enterprises, organizations
Leading Organization	China Green Carbon Foundation
Contact	National Forestry and Grassland Administration 84238916 Zheng Sixian

Contribution Official Name	**Global Action on Desert Vegetation Restoration for Carbon Sinking to Tackle and Mitigate Climate Change**
Summary	**Objective:** The action, along with the UN campaign of 10 years of ecological restoration, to green 5% of the world's 3,600 square kilometres of desert to building up a new carbon sink of 4 billion tons of carbon, and improve the regional economies. **Description:** Deserts covers more than one fourth of the world's land, and the local communities' livelihoods are under threats. Through an integrated ecological restoration approach, as indicated with 30 years of successful practices in the Kubuqi Desert of China, the restored vegetation in the desert can be a practical solution for carbon sinking as well as a solid foundation for development of green economy. This action calls for efforts from all stakeholders in setting up a special strategy to put back vegetation of 5% of the world's deserts, i.e. a total area of 1.8 million square kilometres for carbon sinking incorporated with integrated land use development of the regions for better livelihoods of the local communities. According to the data from Kubuqi desert, this will build up a sustainable carbon sink of 4 billion tons, and promote a new desert green economy with a scale reaching a level of 1000 billion US dollars. It will direct contribute to UN Agenda 2030 in various areas such as poverty reduction, food security, green energy, employment and economic growth etc.
Leading Organization	Elion Resources Group, China
Contact	Luo Wei, Director of International Cooperation Office, Elion Resources Group. luowei@elion.com.cn

Contribution Official Name	**Sustainable Forest Management – Sustainable Land Use Planning, Forest Management and Improved Agriculture Practice**
Summary	**Objective:** The Government recognizes the significant impacts from commercial logging, shifting agriculture and expansion of commercial agriculture has committed to work to deliver emissions reduction related to reductions in emissions from deforestation and forest degradation as well as the sustainable management, conservation and enhancement of forest carbon stocks (REDD+). This approach has been confirmed by PNG's National REDD+ Strategy which sets out action across land use planning, environmental management (including forest, environmental management and conservation actions) and action on sustainable agriculture as well as ongoing strengthening of capacity for managing, monitoring and reporting on the status of PNG's forests and ensuring that any changes are done in line with international safeguards. Actions on Sustainable Planning that the Government has already embarked on: • Announcement of Round Logging Banning by 2020 • PNG will increase its climate ambition (by revising its NDC), improve forest management, improve sustainable land use planning and improved agriculture practices to ensure that the forest cover/carbon sink's capacity is maintained or improved. **Description:** Papua New Guinea (PNG) comprises of the eastern portion of New Guinea which is the largest tropical island in the world and contains the third largest tropical rainforest after the Amazon and Congo Basin. With over 80% of the 46.9 million total land area under forest (i.e. 33.7 million hectares), and a low deforestation rate of 0.04%, sustainable management of this national asset is critical to achieve the global targets of 45% GHG emission reduction over the next decade and zero emissions by 2050. Developing countries are experiencing increase rate of forest degradation and forest deforestation. These losses of tropical rain forest are due to commercial logging and land use for agriculture purposes. In order to alleviate the loss of carbon sinks, one of PNG's government effort now is encouraging sustainable forest management as the key for using forest resource in the present without depletion of the resource for the future.
Leading Organization	Papua New Guinea
Contact	Debra Sungi, debra.sungi@gmail.com

Contribution Official Name	**Fossil fuel abatement for Diesel-based Power Systems: An Action to meeting SDG 13 through Sustainable Electricity**
Summary	The Government of Papua New Guinea in its Vision 2050 goal is to have 70 % Energy in Electricity by 2030 and to have 100% by 2050. In achieving the Long-Term Goal, a Renewable Energy Plan by the Government was developed with planned actions by the Government of Papua New Guinea that will be rolled out to all the provinces that are still using diesel to meet its goal to be 100% Renewable Energy by 2050. The Demand Focus sets out the potential areas of different renewable energy sources. The same concept is very applicable to other small island developing countries and countries with many rivers and mostly tropical areas. With PNG's power system stretched as it is – demand already exceeds supply – the underdevelopment of power generation presents the country with a unique chance to build up the system in a clean, efficient, cost-effective, sustainable way. High and frequent precipitation, combined with rugged, mountainous terrain, mean dozens of river valleys have optimal conditions for hydropower plants, which at present make up about 40% of PNG's installed capacity. These targets are doubtless ambitious, yet PNG's untapped resources are more than enough to meet them. A study by Bloomberg New Energy Finance ranked PNG in the top 10 for potential renewable resources, with about 2.5 GW of these but only 2% of it exploited. The primary challenges going forward will thus be accessing and unlocking this potential through PPPs. Only about 5% of the country's 4200 MW of technically and economically feasible hydro potential has so far been developed, leaving room for growth to generate up to 36,800 GWh a year, according to the International Energy Agency. The potential could easily be much higher than even these conservative estimates, if a more comprehensive assessment were made that takes full account of PNG's pitched terrain and high rainfall (1000-9000 mm a year.
Leading Organization	Climate Change and Development Authority (CCDA) Papua New Guinea
Contact	Debra Sungi, debra.sungi@gmail.com Alfred Rungol, kaferinrin@gmail.com

Contribution Official Name	**The scaling up of hydropower/solar energy in Papua New Guinea**
Summary	There are abundant renewable energy resources available in Papua New Guinea (PNG) yet only 15% of Papua New Guinea's total population has access to power. Hydropower has the potential for more than 15,000 MW yet has only an installed capacity of around 165MW. Solar Energy has the potential for 1,244TWh per year yet utilizes way less than this. Wind Energy, geothermal, biomass, biogas, ocean thermal energy, tidal energy and energy runs the same race. PNG's commitment to have 70% of its households have access to electricity by 2030 and to use 100% renewable energy by 2050 seems a long way off. Current players in the electricity market have set high tariffs that subsistence farmers or rural dwellers can't seem to afford. The current tariff rate is at 0.69 toea for on grid users which is set by the Independent Consumer and Competition Commission. Off-grid users have unfortunately been charged more hence access to affordable and reliable power has thus far been a struggle. Papua New Guinea (PNG) has entered into public private partnership deals with various private sector bodies to utilize the renewable energy sources in the country. Furthermore, PNG has also had the opportunity for donors like the World Bank (WB) and the Global Environment Facility (GEF) venture into hydro and solar power projects. Bilateral assistance from Australia, China, New Zealand, and the United States of America (USA) have one way or another contributed to the power sector (on-grid and off-grid power).
Leading Organization	Papua New Guinea

Contribution Official Name	**Climate Change, Inclusive Development and Quantum Neural Networks**
Summary	Bringing about Inclusive Development and Job creation by the creation of Quantum Neural Networks applications in Climate Change mitigation. The causes and effects of climate change could lead to innumerable scenarios. Mentioning one of these results is the imbalances in the human health. Thus mitigation efforts for these scenarios would require solutions of medical interventions. This would formulate solutions for utilization of Accessibility and Inclusive Development. Developing and implementing the solutions on Accessibility and Inclusive Development would build upon the theories and ideologies of Quantum Computing and Neural Networks [a branch of Artificial Intelligence computation algorithm] and its integration into the sectors approach of climate change.
Contact	Ashwini Sathnur

Contribution Official Name	**Supporting Bankable Deals for Climate Mitigation and Adaptation through Investments in Nature**
Summary	**Objective:** The sustainable, long-term, management of terrestrial, coastal and marine ecosystems needs to be at the forefront of our endeavours to adapt and mitigate climate change. Only holistic approaches combining inclusive economic growth with ecosystem conservation have the potential to bring about this necessary paradigm shift in society. IUCN's conservation finance initiatives aim to break the well-known cycle of economic degradation associated with business activity by assisting investors to generate economic as well as positive social and environmental returns, enabled with capital and expertise. **Description:** This initiative will use the set-up and significant progress made by the Blue Natural Capital Financing Facility (BNCFF) and the Conservation Financing Facility (CFF), as part of the efforts of the Coalition for Private Investment in Conservation (CPIC). The BNCFF and CFF are contributions aimed at reducing the access barrier to private finance for project developers. They both help bridge the funding gap in climate and conservation finance by preparing investment opportunities for the private sector. They support projects with high climate and conservation benefits and advance them to a stage at which for-profit investors start seeing them as an investment opportunity (i.e. bankability).
Leading Organization	IUCN
Contact	frank.hawkins@iucn.org and dorothee.herr@iucn.org;

Contribution Official Name	**Food System Transformation: A Sustainable and Healthy Nature-Based Solution**
Summary	Transforming food systems to provide sustainable and healthy foods in alignment with the planetary boundaries is essential for the future of our planet and humanity. With consensus on the scientific targets for healthy diets and sustainable food production that has emerged from the EAT-Lancet report, we have clear guidance on how to produce food that is good for people and planet. The global food system exerts enormous environmental pressures accounting for around 30% of GHG emissions, over 70% of freshwater withdrawals, and 40% of land use. It is also the principal driver of deforestation and biodiversity loss. By 2050, global red meat demand is expected to rise by 76%, a trend that will make it impossible to achieve the 1.5°C Paris Agreement target. Beyond red meat, food production needs to transform from a major CO_2 emitter to a major carbon sink to achieve the Paris Agreement. Unsustainable and unhealthy diets also present major threats to human health worldwide. Governments around the world face rapidly increasing public health costs due to poor nutrition. One in nine people (approximately 821 million) are hungry with children among the most vulnerable. The EAT-Lancet Commission on Food, Planet, Health has for the first time set global scientific targets for healthy diets and sustainable food production making the transformation of the global food system 2 not only possible but also an essential ingredient of a nature-based solution to combatting climate change.
Leading Organization	EAT Foundation

Contribution Official Name	**Food and Land Use System Transformation**

Summary	The Food and Land Use Coalition (FOLU) proposes a new global approach be launched at the Summit which engages governments, the private sector, civil society, farmers and local communities to create a tipping point in food and land use systems critical to delivering the SDGs and Paris Agreement. The next ten years are critical to meeting these ambitions.
	
	The FOLU Transformation Approach, in which there is already strong commitment and momentum, focuses on the challenge of feeding a growing population a healthy and nutritious diet, and protecting vital natural ecosystems which sustain life, at a time when rural communities and key ecosystems are suffering growing stresses from climate change. We propose a new, integrated approach to sustainable land use (a FOLU Transformation Approach) which:
	• Values and protects natural resources
	• Provides nutritious, safe and affordable food for at least nine billion people
	• Cuts food loss and waste by at least 50 per cent
	• Delivers up to a third of the required reduction in global emissions through natural climate solutions
	• Ensures rural communities are resilient and thriving, and rewards people for the actions they take to protect the environment, including through efforts to:
	  • Enhance livelihoods for small-holder farmers worldwide
	  • Restore critical ecosystems such as forests, peatlands and mangroves
	  • Mobilise public and private finance.

Lead Organisation(s)	Food and Land Use Coalition (FOLU)

Contribution Official Name	**Protected Areas and Resilient Landscapes – Project Finance for Permanence in Colombia, Perú and Bhutan**
Summary	Protected areas and other conserved areas, such as indigenous and community conserved lands and sacred natural areas, have played a critical role in biodiversity conservation for the past century. Beyond providing a haven for species, these areas also provide vital ecosystem services that sustain livelihoods, connect landscapes, capture and store carbon, and inspire people to value the natural world. Governments, protected area managers and conservation groups alike often neglect the increasing risk that climate change poses to protected areas and the ecosystem services they provide. Most planners and managers of the world's protected areas do not consider climate risks, instead relying on traditional approaches to conservation that are rapidly becoming obsolete with increased warming and climate variability. WWF believes that a viable future for people and nature mandates that conservation efforts and strategies– including the management of protected and other conserved areas–are continuously updated to account for unavoidable climate change risks to biodiversity, ecosystems and ecosystem services. National governments have a vested interest in doing so to ensure that protected areas continue to deliver on commitments to their citizens and to the UNFCCC, the Convention on Biological Diversity (CBD), and the UN Sustainable Development Goals. This contribution will focus on guiding Parties to centrally incorporate these ideas into revised NDCs for 2020.
Lead Organisation(s)	WWF

Contribution Official Name	**Conservation Opportunities Under Climate Change Considerations: The Experience from the Amazon Biome**
Summary	The Amazon biome is the largest tropical ecosystem of the world and home to 26 million inhabitants, including more than 400 indigenous peoples and nations. It has an exceptional biological and cultural richness that needs all the effort we can invest in its preservation, especially as this vast mega diverse region is probably the second most vulnerable to climate change after the Artic. The deforestation of its extensive forests contributes significantly to global warming. Consequently, the challenge is to reduce or stop deforestation. This would reduce the emissions of CO in quantities that are relevant at a global level and make it possible to maintain the Amazon's cycle of humidity, which is vital for global climate regulation. With reduced deforestation rain would not continue to be disrupted by the lack of evaporation caused by deforestation. The creation of new protected areas or the expansion of existing ones, especially in zones where conservation and resilience potentials are high, their inclusion in landscape approaches and the implementation of strategies that strengthen connectivity within the biome, become fundamental actions to enable biodiversity to adapt to climate change and for maintaining the supply of ecosystem services in the long term in the Amazon biome. Governance and policy-making processes for conserving the Amazon should include climate change and resilience criteria for planning and managing protected areas systems in the region and consider the need for a stronger socio-institutional adaptive capacity that can facilitate natural processes for adapting to climate change.
Lead Organisation(s)	WWF

Contribution Official Name	**Heritage Colombia (HECO): Resilient Landscapes that Maximizes Contribution to Colombia´s Mitigation and Adaptation Goals**
Summary	Colombia's climate spans an ample range, from very humid tropical rainforest to arid deserts. The climate variations across the country are due in part to the varied landscapes, which includes the Andes Mountains, Amazon forest, Pacific and Caribbean coasts and Orinoquia - plains. Historically Colombia has been prone to catastrophes triggered by strong climate variability (mostly associated with El Niño) and extreme hydro meteorological events. In the future temperature increases, changes in precipitation patterns, droughts, flooding and landslides are likely to be the most significant climate threats in Colombia. In this context Colombian forests are at the same time a major component of the countries mitigation agenda (maintenance of carbon sinks, reduced deforestation, increased restoration) and a major resource for climate adaptation either at the local and sub national scale. Regarding forested landscapes and their role in GHG emissions and mitigation, the country's natural forests cover app. 60 million hectares1, and storage app 26.22 billion T CO_2eq2. During the period 1990- 2016, 6 million hectares were deforested throughout the country. According to the National Greenhouse gas inventory (IDEAM 2017) in 2012 the country GHG emissions were 185.6 Mt CO_2eq, 43% of which came from the agricultural, forest and land us change activities (AFOLU)with deforestation contributing app. 35% of it.
Lead Organisation(s)	WWF

Contribution Official Name	**Andes Action: Restoration of One Million Hectares of High Andean Forest Ecosystems**
Summary	Andes Action is a new Latin American-led large-scale restoration initiative, aiming to restore one million hectares of high Andean ecosystems (mostly Polylepis forests) in Colombia, Ecuador, Peru, Bolivia, Argentina and Chile in the next 25 years. Andes Action works with a growing and scalable network on-the-ground conservation/restoration leader in six countries with proven, effective models to partner with indigenous communities to reforest priority watersheds – mainly for local climate resilience and water security reasons. Based on a model developed in Peru over the last 18 years, Andes Action's on-the-ground leaders harness ancient Incan traditions in indigenous communities to provide effective restoration: In the spirit of Ayni (reciprocity), communities unite by donating their time to reforest each other's watersheds, creating a growing, culturally enhanced, cost-effective restoration movement to be replicated and scaled across Latin America. To date, approximately two million native Polylepis trees have been planted, with an additional 500,000 trees per year. The goal is to double tree planting every year to reach 5-10 million trees planted yearly at the end of phase 1 (2019-2024).
Lead Organisation(s)	UNEP

Contribution Official Name	**Integrating Green and Gray Infrastructure Planning for Water**
Summary	Nature-based solutions for water, such as wetland restoration, reforestation, soil health practices and other agricultural best management practices (BMPs) have demonstrable benefit to water quality and water quantity regulation in multiple ecological and socioeconomic systems. The challenges for widespread deployment range from awareness by key decision makers, policy constraints that prevent investments, lack of implementation capacity that can transcend jurisdictional boundaries, and inadequate consideration of nature-based solutions at the time of infrastructure planning and project development. Addressing this requires innovative approaches to shape water infrastructure planning. Developing an integrated planning approach that combines gray infrastructure with NbSW can be a feasible way to achieve the major task of supplying and delivering water to communities in a secure and sustainable way. Conventionally, efforts to address water problems have been focused in developing gray infrastructure, which provides a short-term solution to water pressing problems, and is not adaptable enough to evolving climate changes pressures. NbSW solutions are delivering demonstrable positive impacts in the medium to long term with multiple benefits possibly including biodiversity conservation, carbon mitigation, and livelihoods resilience. There is no doubt that each of these viable alternatives on their own contributes to address water problems, but they are not enough by themselves.
Lead Organisation(s)	The Nature Conservancy (TNC)

Contribution Official Name	**Achieving Multiple Global Objectives in a Synergistic and Pragmatic Manner through Scaling up Public-Private Partnerships for Managing Protected Areas - African Parks Network**
Summary	**Objective:** Well-managed protected areas represent the front line in the global effort to protect biodiversity, including wildlife, and the economic benefits that can be unlocked. They provide a place at which multiple global objectives synergise in a pragmatic manner, including on biodiversity, climate change and sustainable development. There is a unique opportunity, based on proven approaches, to achieve a transformative impact by better supporting and investing in key protected areas through the public-private partnership model. Well-managed parks create the necessary pre-conditions for generating investment in wildlife-based tourism, local business enterprises, carbon sequestration, security, education and healthcare and they promote pragmatic south-south and north-south cooperation. **Description:** Ensuring nature-based climate solutions are about conserving and restoring wild places and planting indigenous species, so that we achieve biodiversity and climate objectives, is critical to delivering on both biodiversity and climate-related international commitments in a synergistic manner. Using the public-private partnership model, we have shown how public, philanthropic and private finance can be mobilised and blended to manage parks in a way that delivers measurable benefits for biodiversity and climate, while also delivering on the SDGs. By focusing on specific parks, achieving the SDGs and delivering on commitments under multiple global conventions, including on climate change, biodiversity, desertification, migratory species, trade in endangered species, international wetlands of importance and world heritage sites, can synergise on-the-ground in a pragmatic and measurable manner. This is exactly what we see in Garamba National Park, in the Democratic Republic of Congo (DRC) for example, see www.linkedin.com/pulse/salute-rangers-garamba-national-park-drc-john-e-scanlon-am/
Lead Organisation(s)	African Parks Network
Contact**	John Scanlon, johns@africanparks.org and Morgan Pecora-Saipe morganps@africanparks.org

Contribution Official Name	**The Architecture for REDD+ Transactions (ART): Attracting New Investment to Protect and Restore Forests**
Summary	**Objective:** To transform the landscape for REDD+ to deliver on its massive climate impact potential. **Description:** Forest conservation and restoration can provide over one-third of the emissions reductions needed in the next two decades, representing a gigaton-scale mitigation opportunity. Significant new sources of forest finance can be mobilized with more rigorous jurisdictional approaches to REDD+ that meet the highest technical, environmental and social standards and are aligned with Paris Agreement commitments. The Architecture for REDD+ Transactions (ART) (www.artredd.org/), is a global voluntary initiative to promote the environmental and social integrity and ambition of carbon emission reductions from the forest and land use sector, in particular to recognize forest countries that deliver high quality emissions reductions from reducing deforestation – a process called REDD+. ART will serve as a global quality benchmark for forest emission reductions, providing confidence to market participants and stakeholders in the integrity of results in order to catalyze new, large-scale finance for REDD+. ART will provide a credible, independent program overseen by a global Board, and run by a Secretariat. It includes a rigorous Standard to quantify emissions reductions from REDD+ activities at a jurisdictional and national scale, and a comprehensive process to transparently register, verify and issue high quality, serialized credits that are fungible with those from other sectors. Once issued, these serialized credits can be sold into voluntary or compliance carbon markets or may be eligible for transfer under the Paris Agreement towards meeting NDCs and increasing ambition. The ART's sister entity, the Emergent Forest Finance Accelerator, will provide a guaranteed source of demand for the purchase of ART emissions reductions, streamlining access to a wide range of REDD+ buyers. The initiatives together will transform the landscape for REDD+ to deliver on its massive climate impact potential.
Participants	Climate and Land Use Alliance (CLUA), Environmental Defense Fund (EDF), Norway's International Climate and Forest Initiative (NICFI) and the Rockefeller Foundation
Lead Organisation(s)	Winrock International ART Secretariat, Emergent
Contact	jkadyszewski@winrock.org, mgrady@winrock.org, eron@climateandforest.com, rlubowski@edf.org

Contribution Official Name	**Social Forestry Helps Adapt to Climate Change**
Summary	More than a third of Indonesian Villagers in forest-frontier areas– at least 38 million households—are highly dependent on the forest resources to support their livelihoods. About 10 million people in forest-frontier areas live under the official poverty line. At the same time, due to intense exploitation of natural resources by private forestry and plantation firms, deforestation rates in Indonesia have remained high. Social forestry—where local communities hold the rights to manage the forest—is one of the Indonesian government's strategies for poverty alleviation and improvements in food security. It is also increasing important for resolving forest conflicts while improving the ecological function of the forest. Indonesia has set up "social forestry" as a national priority program, where 12.7 million ha are to be allocated for community management under five different schemes (village forestry, community forestry, community timber plantations, co-management with private partners, and finally customary forests). The first four schemes noted here give access to local communities and the ability to manage lands for 35 years (a period that can be extended). Customary forests on the other hand gives access and control for indigenous groups to manage, and these lands are no longer considered as state forest, but rather as forests under communal ownership. The realization of social forestry is still far from what has been targeted. Until recently the government has legalized 2.6 million ha under community management. The most common challenge is the overlapping claims on land, and lack of clarity regarding village administrative areas.
Lead Organisation(s)	WARSI, an NGO focused on community conservation in Sumatra and Kalimantan. Climate Land Ambition and Rights Alliance (CLARA)
Contact	Emmy.Than@gmail.com

Contribution Official Name	**Rewilding Europe to Invigorate Local Economies**
Summary	Collective purchase by local residents of an 8400- hectare estate where 800 hectares of woodland has now been restored. Previously, this area was used for sheep grazing, and as shooting areas, and although this use of the land benefited a few people (namely the private landowners), it did not provide the environmental and social benefits which are now evident. The woodland, which has been able to grow since the sheep were removed, now provides more jobs than sheep farming. The woodlands continue to provide income from deer hunting which was already present in the area. But further income is generated from tourism, from walkers following the "North Coast 500" road, and seasonal sightseers. Tree orchards, tourist paths and fuelwood projects are underway. Furthermore, the growth of this native woodland composed of birches, rowans, pine and willows is a haven for wildlife and creates a rich ecosystem which was previously absent, not to mention acting as a new carbon sink. Crofters were initially provided with grants from the Scottish Government to plant trees, and provided with income to compensate for not keeping sheep on the land. However, income is now such that the benefits of woodland over sheep grazing are clear. The purchase of this land is setting a precedent for land reform in Scotland, much of which has historically been under the private ownership of large estates. More communities across Scotland are now starting to purchase land as they recognize the benefits of reforestation for the environment and society.
Lead Organisation(s)	Movement Reforesting Scotland, Fern Climate Land Ambition and Rights Alliance (CLARA)
Contact	kelsey@fern.org

Photo credit: Pexels /Pixabay

Contribution Official Name	**Healthy Forests and Resilient Communities in the Congo**
Summary	Enabling local and indigenous communities in the Congo Basin to take over forest management has the potential to restore natural forests, conserve biodiversity, combat illegal logging, address climate change and secure sustainable livelihoods. By managing forests sustainably and inclusively, community forestry can help curb deforestation and reduce associated greenhouse gas emissions, as well as supporting sustainable resource management and development. Fern is working with Centre pour l'Environnement et de Développement (CED) in Cameroon, Centre pour l'Information Environnementale et le Développement Durable (CIEDD) in Central African Republic and Observatoire Congolais des Droits de l'Homme (OCDH) in the Republic of Congo as part of a DFID-funded CoNGOs (NGOs collaborating for equitable and sustainable community livelihoods in the Congo Basin forests) project. This project aims to raise awareness, to trial pilot projects, and to create a favourable environment for community forestry.
Lead Organisation(s)	Fern (Brussels and UK) and their partner Observatoire Congolais des Droits de l'Homme (OCDH) in Congo. Centre pour l'Information Environnementale et le Développement Durable (CIEDD) in Central African Republic and (Centre pour l'Environnement et de Développement)(CED) in Cameroon. Climate Land Ambition and Rights Alliance (CLARA)
Contact	marieange@fern.org

Contribution Official Name	**Local and Indigenous Knowledge in 'Expert' Climate Dialogues Experience in Colombia Shows that Local and Cultural Climate Perspectives must be Included in High-Level Policy Making**
Summary	**Objective:** Recognize and make visible culturally different perceptions, relationships and actions towards environmental and climate transformations on diverse areas in Colombia. **Description:** For over two years, indigenous researchers and a multidisciplinary team of students and professionals inquired on the different aspects of this project covering urban and rural areas in the country (Bogotá, Alta Guajira, Valle de Tenza, Timaná, Cumbal, Alto and Medio Putumayo and National Natural Park Cahuinarí). During the process, local and traditional knowledge from nature and climate were identified from indigenous, rural and urban peoples, as well as their adaptation strategies on climate variation on their territories. Those knowledge and strategies were widespread by articles, book chapters, working paper and edit books (Climate cultural perspectives and Cultures, knowledge, policies and citizenships around climate change) lectures on national and international events and training public officials in climate-related research. In addition to bring the results into light, those visibility spaces were meant to highlight the importance of the local and traditional knowledge in the creation of public policies of climate change as a response to the difficulty of developing focal and local climate scenarios, the lack of geographical and climate information and the need to create adaptation strategies culturally appropriate based on historical, cultural and political backgrounds so in the end, those policies really generate concrete and effective solutions to current climate variability.
Lead Organisation	Local rural and urban communities and indigenous peoples in Colombia
Contact	Andrea Prieto, andreaprieto@ambienteysociedad.org.co

Contribution Official Name	**Biodiversity and Climate Change**
Summary	Biodiversity is as important as climate change and both must be treated with equal importance. Climate change is a major factor in the erosion of biodiversity. Changes in atmospheric temperature and precipitation, ocean acidification, sea-level rising, and the nature of some extreme events are affecting biodiversity and ecosystem services. In addition, climate change amplifies the effects of other factors such as habitat degradation, pollution, invasive species, overexploitation, population movements and migration. On the other hand, biodiversity loss accelerates climate change processes, with the ability of degraded ecosystems to assimilate and store CO_2 tending to decrease, reducing the available adaptation options. The 7th IPBES Plenary held in UNESCO in April-May 2019 adopted the first Intergovernmental Global Assessment Report on Biodiversity and Ecosystem Services (negotiated approved by 132 countries), which clearly highlights these interactions (UNESCO is one of the four United Nations institutional partners together with UNEP, FAO and UNDP of IPBES). The consequences of global changes in climate, biodiversity and nature's contributions to people will be felt most acutely in lands that are home to large proportions of the world's indigenous populations and many of the world's poorest communities. UNESCO's commitment to biodiversity and climate change is a concern for its all sectors of programme. UNESCO's key message for the Summit: humanity has a global responsibility to address these two challenges and their interactions at the same time and with the same urgency.
Lead Organisation	UNESCO

Contribution Official Name	**Rally for Rivers — A Movement to Revitalize India's Dying Rivers**
Summary	**Objective:** Rally for Rivers (RfR) launched in 2017 by Sadhguru, Founder of Isha Foundation, offers a comprehensive Nature-Based Solution to drought and soil degradation. Through mass community afforestation and partial conversion to agroforestry in lands adjoining rivers, it offers a scientifically developed methodology to restore riverine ecosystems, improve soil health, augment river and groundwater levels, mitigate climate risk – particularly flood and drought, and promote biodiversity. It secures livelihoods for vulnerable farming communities and food and water security for burgeoning populations. **Description:** The RfR campaign garnered the support of 162 million people, becoming one of the world's largest ecological movements. It received India's National Water Award in 2019 for Best Educative/Mass Awareness Effort. Sadhguru led a team of 24 scientists, agriculturalists, and others to develop a set of Policy Recommendations for River Revitalization. It was endorsed by the Prime Minister and incorporated, in entirety, into India's river revitalization policy. 18 state governments have begun implementing the RfR recommendations. Six states have engaged Isha Foundation to implement their river revitalization projects. Isha Foundation's first implementation has begun in Maharashtra, which has sanctioned USD 59 million for a 5-year project to revitalize the Waghari river and address extreme farmer distress. The second project launches in September 2019 in Karnataka with 'Cauvery Calling' - a campaign to spearhead the revitalization of Cauvery river, which has depleted over 40%. Through a 12-year project Isha Foundation and its partners will support more than 5 million farmers in planting 2.42 billion trees in agricultural lands in the Cauvery river basin, and in making a partial shift from crop cultivation to perennial agroforestry. This project alone has the potential to impact 84 million people through sustainable land management. Rally for Rivers projects are establishing a demonstrable solution which can be replicated in tropical regions globally.
Lead Organisation	ISHA Foundation
Contact	Tara Pahwa, tara@ishausa.org

Contribution Official Name	**Seaforesting the World's Seas**
Summary	Seaforests are major natural carbon sinks that have been shrinking in several places of the world. This is worrisome not only because of the critical function these ecosystems perform in the carbon cycle and in fish production, but also because many of these ecosystems are also important biodiversity hotspots. This is especially true in places like the Portuguese coastline which has been an important refuge over the last glaciations and, thus, supports today and ancient biodiversity. Along the Portuguese coastline many species from different taxa find their southern limit, while other have their northern limit, and this diversity has contributed to complex and biodiverse trophic networks that play an important role as biodiversity sources and climate regulators. The strategic goal of this proposal is threefold: to protect coastal and marine seaforests; to restore degraded coastal and marine ecosystems through the translocation of seaweeds which may act as the propulsor of natural recovery; and to test management regimes that may contribute to greater knowledge of ecosystems' functioning and best practice guidelines. In the first phase of this proposal the aim is to produce some macroalgae species in the lab, with innovative methodologies based in aquaculture techniques, and to transplant the algae individuals to natural habitats along the Portuguese coast. In a second phase, this approach shall be used to restore natural habitats in other places of the world that have also undergone biodiversity loss or a decline of seaforest distribution area. The proposal also focuses on seaforests' protection and awareness-raising.
Lead Organisation	The Republic of Portugal
Contact	geral@dgpm.mm.gov.pt

Contribution Official Name	**Ecosystem Restoration Initiative**
Summary	**Objective:** The main objectives of the new initiative are three-fold: a. facilitating transition towards environmentally resilient Pakistan by main streaming adaptation and mitigation through ecologically targeted initiatives covering afforestation, biodiversity conservation, enabling and enhancing policy environment consistent with the objectives outlined in Pakistan's Nationally Determined Contribution (NDC); b. integrating economic policy, growth and poverty alleviation with efforts at reducing emissions, increasing sink capacity and enhancing resilience within and across forestry, agriculture, oceans and food systems, including through biodiversity conservation, leveraging supply chains and technology; c. attaining Land Degradation Neutrality (LDN) by restoring at least 30% of degraded forest, 5% of degraded cropland, 6% of degraded grassland (rangeland) and 10% of degraded wetlands in Pakistan by 2030 to generate eco-system services and provide additional support to mitigation of GHG in Pakistan. **Description:** The ESRI initiative is built on successful initiative to plant Billion Trees popularly called Billion Trees Afforestation Project (BTAP) by the government in Khyber Pakhtunkhwa Province in 2015. The outcomes of BTAP have been duly acknowledged by United Nations Environment Programme, Bonn Challenge and other international bodies and fora. Following the success and confirmation by the independent monitors, Pakistan decided to set a goal of 10 Billion Tree Plantation, in a phased manner, across Pakistan. This wider project, which is ongoing, is expected to deliver dividend in preserving atmospheric health, reducing greenhouse gas effects, lowering cases of random floods, lowering rains, droughts and enhancing other biodiversity supportive actions. The initiative will develop, support and implement projects and programmes on: • Promoting biodiversity and mitigating land degradation • Protecting the marine environment from land-based activities • Protecting the ecological balance in food chains • Overcoming deforestation and establishing a forest economy • Preventing high intensity floods through improved flood water management – Recharge Pakistan Programme • Sustainable Blue Economy The initiative also seeks to establish an independent, transparent and comprehensive financial mechanism in Pakistan called "Eco-system Restoration Fund (ESRF)" to finance the projects and programmes under the initiative. Government of Pakistan has committed US$ 50 million as seed money for the Fund.
Lead Organisation(s)	Ministry of Climate Change, Government of Pakistan
Contact**	Mr. Muhammad Irfan Tariq, mirfantariq@gmail.com

** Name and email of focal point contact for the initiative.

Contribution Official Name	**Reducing Emissions by Stopping Forest Exploitation for Bioenergy**
Summary	**Objective:** Stop forest harvesting for "biomass" energy. The IPCC is clear we must restore and expand forests to mitigate climate change, yet many countries provide lucrative renewable energy subsidies for burning wood for energy. This is driving a surge in forest harvesting for fuel, including in old-growth, carbon-rich and biodiverse forests in North America and the EU. Biomass energy is treated by many policies as "carbon neutral" whereas in reality, wood-burning power plants emit more CO_2 than coal plants per megawatt-hour. Harvesting wood for biomass, and manufacturing wood pellets that are burned both in power plants and for residential heating, is liquidating forests in the US, Canada, and the EU and degrading the forest carbon sink, putting climate mitigation even further out of reach. More legal actions should be taken to challenge the scientifically unjustified treatment of biomass energy as "clean," carbon neutral, and climate friendly. **Description:** To stop forest exploitation for fuel takes a combination of actions. In this case, a lawsuit has been filed against the EU challenging the EU's promotion of biomass as carbon neutral (www.eubiomasscase.org). The lead plaintiff, Wolf Forest Protection Movement, has also taken direct action in Slovakia to stop damage to Carpathian forests by the biomass industry, including working to enact legislation that removes renewable energy subsidies for burning forest wood (www.wolf.sk/en/en-home). WOLF is also working to help achieve purchase and conservation of high-value forest land in the Carpathians and establish an EU "Wilderness Directive" to establish non-intervention areas in every member state.
Participants	Mary S. Booth (PFPI); Peter Sabo (WOLF)
Lead Organisations	Partnership for Policy Integrity (PFPI) USA; WOLF Forest Protection Movement, Slovakia
Contacts	Mary S. Booth, mbooth@pfpi.net ; Peter Sabo peto@wolf.sk

Contribution Official Name	**Ridge to Reef – Grenada Project**
Summary	Conserving Biodiversity and Enhancing Ecosystems: the Case for Protected Areas for Climate Change Resilience in Caribbean SIDS. Our small island homes are endowed with unique cultures and derive much of our economic, environmental and social well-being directly or indirectly from the rich natural resources within our immediate environment. Yet, small island developing States (SIDS) face unique challenges and vulnerabilities which have prompted Agenda 21 (chapter 17, section G; 1992), followed by the Barbados Programme of Action (1994) and the Plan of Implementation of the World Summit on Sustainable Development (2002), to call SIDS and islands supporting small communities "a special case both for environment and development." In particular, climate change phenomena are anticipated to cause significant shifts in species distributions across SIDS. Undoubtedly, climate change impacts on SIDS biodiversity are potentially catastrophic given the disproportionate number of endemic species and the consequent risk that local extinctions might become global ones. SIDS, like Caribbean SIDS, host numerous discrete ecosystems, from mountain forests to wetlands and beyond, that provide food, fresh water, wood, fiber, medicines, fuel, tools and other important raw materials, in addition to aesthetic, spiritual, educational and recreational values, that support island livelihoods, economies and cultures. The biodiversity found within island ecosystems also contribute to the maintenance of ecosystem functions and ecosystem stability against climate stress and disturbances. For example they provide defense against natural hazards, support nutrient cycling, facilitate the formation of soil and sand and they contribute to the regulation of climate.
Lead Organisation	Caribbean Small Island Developing States (SIDS)

Contribution Official Name	**Climate Land Ambition Rights Alliance (CLARA):** **Case Studies of People-Centered, Nature-Based Solutions**
Summary	**Objective:** Climate ambition that safeguards land rights, biodiversity and food sovereignty. **Description:** In its 2018 report Missing Pathways the global civil society network 'CLARA' (climate land ambition rights alliance) summarized nature-based solutions consistent with under-2°C pathways. The solutions were grouped by a) rights, particularly secure land tenure for indigenous peoples and local communities; b) a reorientation toward agroecological food production and changed/reduced meat/dairy consumption; and c) conservation and restoration of forests, with no further loss of primary ecosystems. Earlier this year CLARA members made thirteen submissions to the Climate Action Summit. In late July, together with Global Forest Coalition, CLARA expanded this to release 23 case studies providing specific examples of where resilient, people-centered nature-based solutions are being pursued and need to be scaled up. Individual case studies can be viewed at: www.climatelandambitionrightsalliance.org/case-studies
Participants*	ActionAid, All India Forum of Forest Movements, Asociacion Ambiente y Sociedad (Columbia), Colectivo VientoSur (Chile), CFUGs (Nepal), PIDP (D.R.C.), CIEDD (C.A.R.), CED (Cameroon), Indigenous Information Network (Kenya), MOPAWI/MASTA/FETRIXY (Honduras), Movement Reforesting Scotland, Luzlinar Association (Portugal), Teis Communal Forest (Spain), OXFAM Bolivia, HEÑOI (Paraguay), Kayapo + supporters (Brazil), Community Technology Development Trust (Zimbabwe), PACOS Trust (Malaysia), Udege + supporters (Russia), WOLF Forest Protection Movement (Slovakia), Ole Siosiomaga Society (Samoa), Envirocare Tanzania, Wild Heritage, Australian Rainforest Conservation Society.
Lead Organisation(s)	Pivot Point, Global Forest Coalition, FERN
Contact**	Media: Don Lehr, dblehr@cs.com / +1 917 304 4058 CLARA: Peter Riggs, peteriggspivotpoint@gmail.com / +1 360 789 2520 Global Forest Coalition: Souparna Lahiri, souparna.lahiri@gmail.com

* Participants: Those involved in the formulation of the contribution.
Participants (Name & country; or only Country if national government)

** Name and email of focal point contact for the initiative.

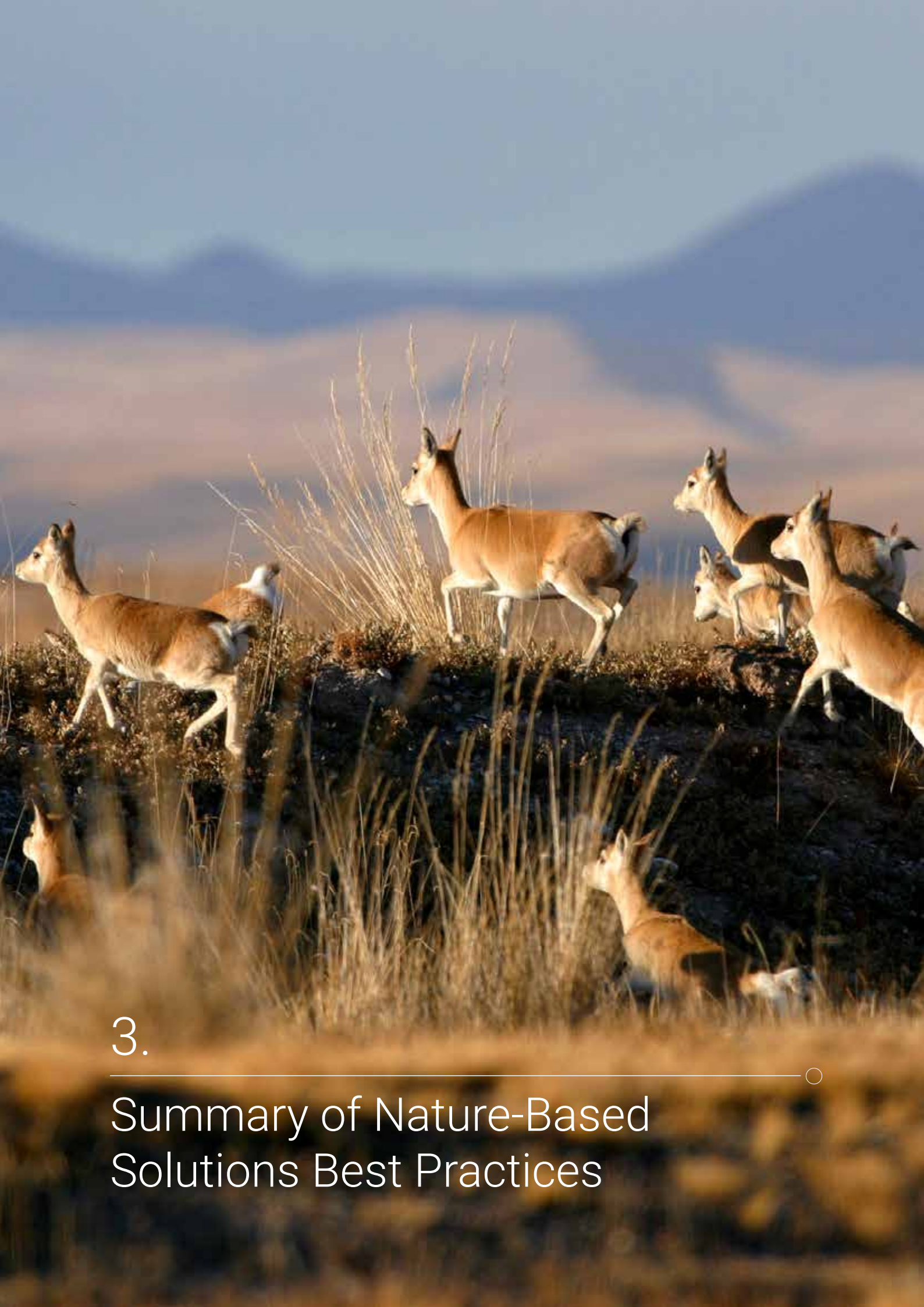
Contribution Official Name	**Dairy Sustainability Framework**
Summary	The Dairy Sustainability Framework (DSF) provides a means for the global dairy sector to demonstrate to consumers and other stakeholders the impacts of the continuous improvements the sector is making, producing healthy nutritious food in a sustainable and responsible way. Dairy Sustainability Framework Vision: A vibrant dairy sector committed to continuously improving its ability to provide safe and nutritious products from healthy cattle, while: 1. Preserving natural resources 2. Ensuring decent livelihoods across the industry
Lead Organisation(s)	Dairy Sustainability Framework (DSF)
Contact	info@dairysustainabilityframework.org

Contribution Official Name	**Making Cities Resilient by Integrating Nature-Based Solutions into Urban Planning**
Summary	**Objective:** Increasing cities' resilience and reducing cities' vulnerability to climate change and natural and man-made hazards by integrating nature-based solutions into cities' policies and city planning. **Description:** The United Nations Office for Disaster Risk Reduction (UNDRR) and its partners are working towards sustainable urbanization. The Making Cities Resilient Campaign (MCRC), launched in May 2010, leverages local governance to address a multitude of urban risks. The Campaign is a UNDRR-led partnership that aims to actively engage local governments and urban communities worldwide on resilience and disaster risk reduction. Phase 2 of the MCRC is being put in motion for 2020-2030 with a focus on assisting Local Governments in designing and implementing policies and plans that build the resilience of their cities. UNDRR recognizes the important economic as well as cultural value and multiple benefits that healthy ecosystems offer to cities; acting as natural buffers for reducing risks and contributing to urban resilience and sustainability. Cities participating in the campaign (currently 4,270 and growing) will be supported in defining coherent risk reduction policies and practices that include nature-based solutions into urban planning.
Lead Organisation(s)	UN Office for Disaster Risk Reduction (UNDRR)
Contact	Ricardo Mena: Menar@un.org & Sanjaya Bhatia: bhatia1@un.org

Contribution Official Name	**The International Alliance to Combat Ocean Acidification: Mobilizing Global Leadership to Advance Ocean Acidification Action Plans that Address Root Causes and Protect Coastal Communities and Livelihoods from a Changing Ocean**
Summary	**Objective:** Under the leadership of its diverse members, the International Alliance to Combat Ocean Acidification (OA Alliance) is harnessing growing scientific knowledge about impacts of ocean acidification and transforming it into increased urgency and ambition for climate mitigation and visible and innovative actions. National, subnational, regional and tribal, first nation and indigenous governments are proactively responding to the impacts of ocean acidification as they chart their course of action for sustaining coastal communities and livelihoods. Members of the OA Alliance commit to take individual actions that address the environmental, cultural and economic threat posed by ocean acidification within their region by creating an OA Action Plan. **Description:** OA Action Plans describe tangible actions members will take to respond to the threat of ocean acidification. OA Action Plans help governments identify key species at risk in their region (e.g. those of economic, cultural, or ecological importance) and develop strategies to protect them, including those focused on using living natural systems.
Participants*	Executive Committee members of the OA Alliance include the governments of: Chile, Fiji, France, New Zealand, the Province of British Columbia in Canada, State of New York, State of California, State of Washington, State of Oregon, the Northwest Indian Fisheries Commission, the Secretariat of the Pacific Regional Environment Programme, and the City of Vancouver in British Columbia, Canada.
Lead Organisation	The International Alliance to Combat Ocean Acidification

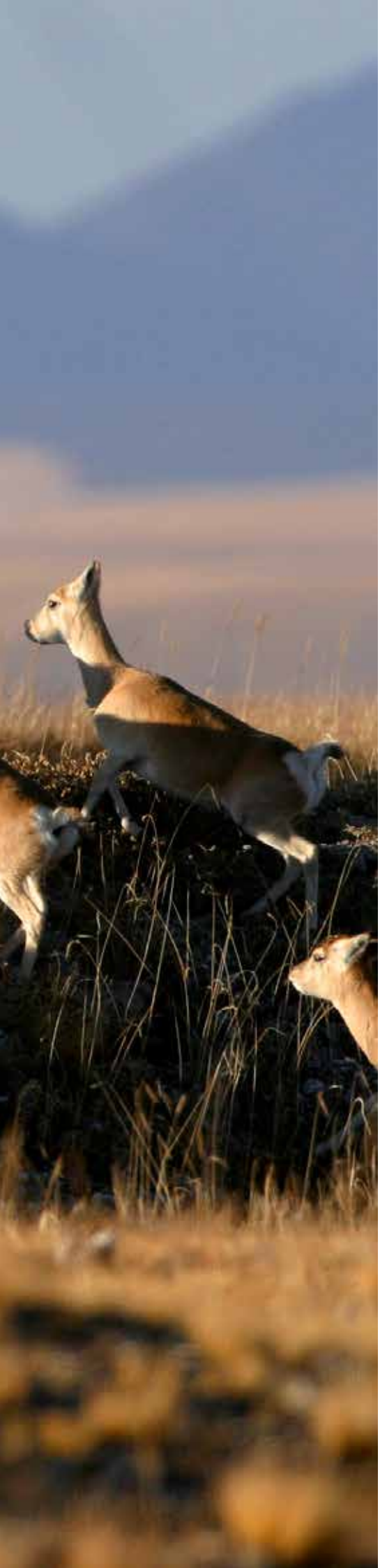
* Participants: Those involved in the formulation of the contribution.

Contribution Official Name	**Integral Ecosystems in City Planning and Landscape Architecture**
Summary	Bureau for Urbanism (BUUR) (Belgium) is a leading multidisciplinary team consisting of urban planners, architectural civil engineers, landscape architects, spatial planners and mobility experts who are passionate about their work. Our expertise as urban planners enables us to deliver intelligent solutions to complex social issues which have a strong impact on our living environment. We do so by carrying out policypreparing studies with regard to sustainable spatial planning; by elaborating dynamic and healthy cities; by creating the conditions allowing the transition from a linear to a circular economy; by realizing qualitative places adapted to a multicultural society; by doing research with regard to sustainability and by setting up polyvalent (transition) networks. BUUR focuses on concepts and projects aiming the reinforcement of the functional and ecologic resilience of our space. We commit ourselves to handle our natural resources (sources of energy, food, materials, environment, flora and fauna) with the utmost care. We want to achieve a maximum of quality while minimizing the impact on the environment, the society and the economy. Within the scope of our projects, whether they are landscape projects focusing on the value of the nature and the biodiversity, or urban projects aiming the creation of a sustainable urban metabolism, BUUR elaborates an integrated vision for overall ecosystems, very often in partnership with external experts. Moreover, we apply our theories on every scale
Lead Organisation	Bureau of Urbanism (BUUR)
Contact	INFO@BUUR.BE



3.

Summary of Nature-Based Solutions Best Practices



Best Practice Official Name	**Conserving Biodiversity for a Beautiful China**
Summary / Description	China is one of the countries with richest biodiversity in the world. However, China is also one of the countries facing serious threats to biodiversity. Although proactive actions have been carried out by governments and departments at all levels, the overall trend of biodiversity loss has not been effectively halted. Therefore, since 2014, China has launched a series of biodiversity conservation projects and increased investment to improve biodiversity protection level comprehensively and achieve the objectives set up in the China National Biodiversity Conservation Strategy and Action Plan (2011-2030). Up to now, more than 180 billion yuan has been invested by China's central government. Carrying out biodiversity conservation, basically controlling the biodiversity loss, and effectively protecting ecosystems, species, and genetic diversity can improve the health and integrity of ecosystems. Integrate, healthy and diverse ecosystems are of crucial importance for human beings to reduce the adverse impacts and adapt to climate change, and to have higher viability and resilience when facing climate change.
Achievement	**Social benefit:** Public awareness on biodiversity has been improved, making biodiversity conservation a self-motivated action of the whole society. The balanced and sustainable development of society, economy, and ecological environment has been enhanced in regions with rich and sensitive biodiversity. The capabilities of biodiversity conservation and management have been improved. **Economic Benefit:** Researches on the conservation, recovery and sustainable use of biodiversity as well as poverty reduction, have been carried out and corresponding fruits have been promoted in order to fully realizing the value of biological resources, guiding local residents to alleviate poverty and improve their well-being. **Environmental Benefit:** Ecological environment in many regions of China can be further improved, and ecosystems can provide better ecological functions such as carbon fixation and oxygen release, air purification, pollution reduction, and wind prevention and sand fixation.
Lead Organisation(s)	Ministry of Ecology and Environment, China

Photo credit: Zhang Dehai

Best Practice Official Name	**Delineating for Ecological Protection**
Summary /Description	Through delineating for ecological protection, the most important and environmentally sensitive areas in China can be protected to provide support for the mitigation of climate change and the conservation of biodiversity. In 2018, ecological protection in Beijing-Tianjin-Hebei Region, Yangtze River Economic Belt, and Ningxia Hui Autonomous Region were approved by the State Council and published by corresponding provincial governments. The other provinces have basically completed the delineating of ecological protection. On this basis, national delimitation plan for ecological protection was initially formulated. By the end of 2020, ecological protection all over China will be delineated, corresponding borders will be settled, and mechanism of ecological protection will be primarily established to optimize the territorial ecological space, stabilize the ecological function and promote the national ecological security pattern. By 2030, the overall layout of ecological protection in China will be further optimized, related mechanisms will be effectively implemented, the ecological functions will be greatly improved and China's ecological security will be fully guaranteed. Up to now, a total of approximately 200 million yuan has been invested by central and local governments for the delimitation of ecological protection, and 287 million yuan has been invested for the construction of the national supervision platform.
Achievement	**Economic Benefit:** The delineation of ecological protection is of great importance for strengthening ecological carrying capacity for sustainable economic and social development through guiding population distribution and economic layout to be adapted to the carrying capacity of environment and resources and promoting intensive utilization of resources. **Social Benefit:** The delineation of ecological protection embodies the idea of "protection first", enhances people's sense of responsibility of ecological protection, and makes ecological protection become deeply rooted in people's mind. Through the strict management of the ecological protection, it effectively restricts inappropriate development and construction, protects the precious ecological resources, and provides important material foundation and ecological support for the long-run development of society. **Environmental Benefit:** Delineating and strictly implementing ecological protection and organically linking pollution control, environment improvement and risk prevention to ensure that the quality of environment does not degrade but gradually improve, reverse the negative trend of environment deterioration fundamentally and finally realize a better home with blue sky, green land and clean water.
Lead Organisation(s)	The Ministry of Ecology and Environment

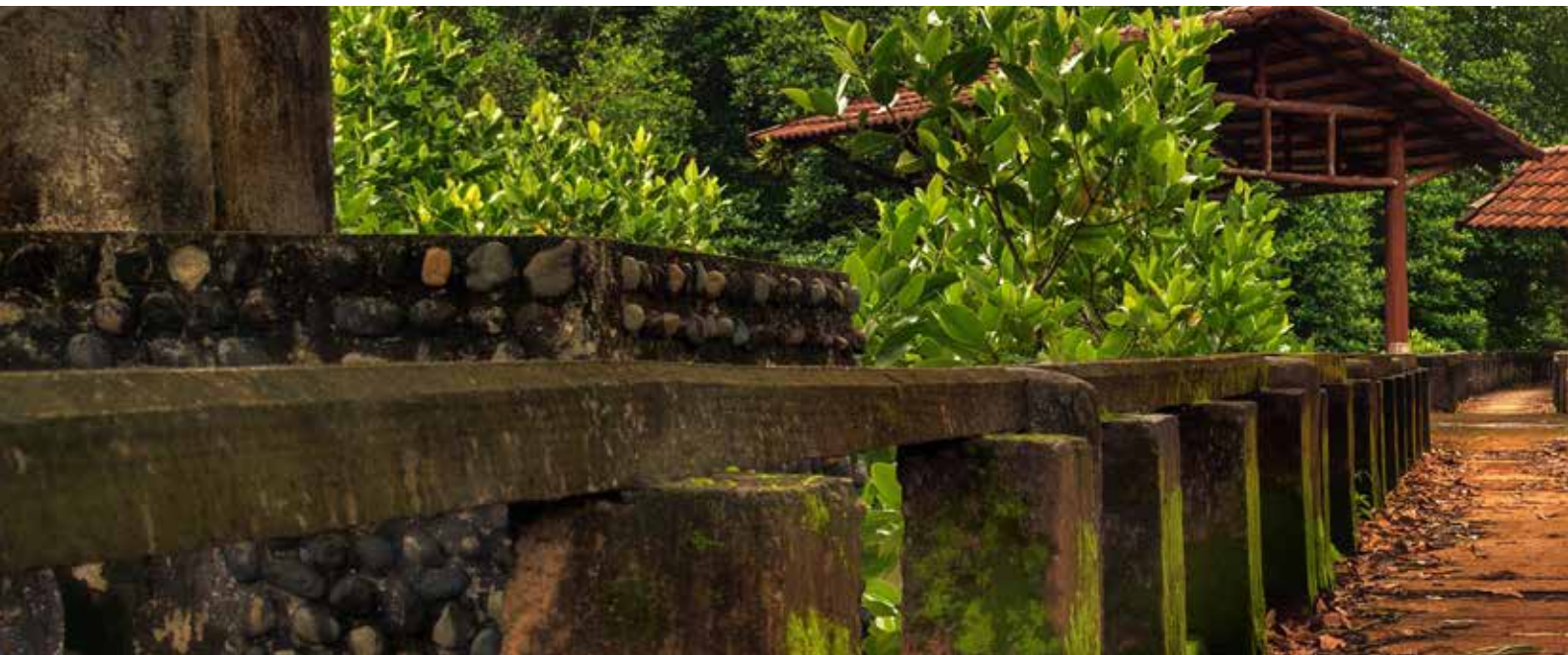
Best Practice Official Name	**Social Participation in Nature Reserve Management**
Summary /Description	In order to strengthen management on nature reserves, it is of great importance to promote the coordinated development of biodiversity conservation and poverty reduction and enhance social participation besides governments. Baoxing County (in Sichuan Province, China) is a major habitat for giant pandas, and therefore, Sichuan Fengtongzhai National Nature Reserve has been established. Local communities have signed a biodiversity conservation agreement with management agency of the nature reserve, in which local communities have committed to protect biodiversity, reduce their dependence or even damage on biodiversity. Meanwhile, they can participate in training on relevant knowledge and technologies and apply for loans with low or even free interest rates for the development of ecological tourism, local agricultural products planting or feeding, traditional medical herb planting and other local characteristic industries. The Environment Conservation and Development Fund has been launched jointly by the government of Baoxing County and an NGO to help local community develop alternative livelihoods. The government provides favorable policies such as subsidized loans and subsidies, the NGO provides startup fund, and local enterprises provide ecological compensation for utilization of natural resources.
Achievement	**Social benefit:** Local residents' awareness of biodiversity conservation has been enhanced, and the enthusiasm for participating in biodiversity conservation and support for ecological environment protection has been improved. Nearly hundred villagers received community training, and their knowledge and technologies about beekeeping, organic food cultivation, and eco-tourism have been improved. **Environmental Benefit:** Currently, negative activities affecting biodiversity, such as poaching, herb digging and deforestation, become quite rare in this area. Nearly 40,000 hectares of forests around the nature reserve have been protected through biodiversity conservation agreements, effectively expanded the protection areas of the habitat of giant panda. In addition, over 500 swarms of bees have been bred, and the pollination acts as a positive role in biodiversity conservation. Over 700 biogas digesters have been built, and over 2,000 m3 of wood have been reserved annually. **Economic Benefit:** Local economic revenue has increased by nearly 2.6 million yuan, by supporting the development of characteristic industries such as bee farming and ecological tourism.
Lead Organisation(s)	Local government, communities and enterprises of Baoxing County (in Sichuan Province, China), and NGOs in China
Contact	shengwuchu@mee.gov.cn

Best Practice Official Name	**China Renewable Energy Scale-up Program phase II**
Summary /Description	The China Renewable Energy Scale up Program (CRESP) has been designed as a strategic partnership between the GoC and the World Bank/GEF. The objective of CRESP Phase II is to support the ambitious RE scale-up program in China with a focus on efficiency improvement and reduction of incremental costs. It would be comprised of the following five components: (a) policy support; (b) grid integration/access and technical design; (c) technology improvement; (d) pilot demonstration; and (e) capacity building and investment support, in addition to project management support.
Achievement	As this project intends to contribute to the government's ambitious RE targets, achievement of the project development objective will be assessed with the following higher-level outcome indicators: (a) additional RE-based power generation from improved design of the large wind bases (370GWh); (b) additional RE consumption from increased RE penetration in New Energy Cities (1.31Mtce); (c) avoided emissions of CO_2 from the above two indicators (3.9 million ton); and (d) reduced incremental costs of wind power(1.5 cent/kWh) and solar PV over coal-fired power plants (7 cent/kWh).
Lead Organisation(s)	National Energy Administration (NEA) of China World Bank
Contact	luozh@cresp.org.cn

Photo credit: Seagrass Restoration in Tangshan, China by Zhou Yi, Institute of Oceanography, CAS-Good Practice Seagrasses Restoration and Fishery Recovery

Best Practice Official Name	**China: Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region—China National Investment and Guaranty Corporation's Green Financing Platform Project**
Summary /Description	Referred to as GFP, the Green Financing Platform Project, is a loan project executed by China National Investment and Guaranty Corporation, a holding subsidiary of State Development & Investment Corp., Ltd. GFP was approved by the board of Asian Development Bank ("ADB") in December 2016 with a 15-year loan of 458 million Euros. With the sovereign loan from ADB and through financial intermediations, GFP aims to promote the implementation of air quality improvement subprojects in the Greater Beijing-Tianjin-Hebei Region. GFP covers fields of energy saving and emission reduction, clean energy, green transportation, and waste-to-energy conversion. **Main Features of GFP** 1. Facilitating the "Blue Sky Project" and supplying global public goods. 2. Catalyzing co-financing by leveraging more social capital and supporting subprojects through comprehensive utilization of credit enhancement, investment and financing, etc. 3. Taking various means to support SMEs to participate in the prevention and control of air pollution.
Achievement	As of June 30, 2019, there are 39 qualified subprojects approved by GFP, funded with an ADB loan of 298 million Euros, guarantee of 590 million RMB, to support a total investment of CNY 8.3 billion, covering energy-saving and emission-reduction, clean energy, green transportation, and waste-to-energy conversion. Among them, there are 10 SMEs financing subprojects. In addition, 50 bid bonds were provided for over 20 SMEs through Xinyijia E-bond Platform of I&G, reducing transaction costs up to CNY 6.26 million. The subprojects supported by GFP are estimated to reduce 1.13 million tons of coal consumption per year during the operation period, contributing to annual emissions reduction of CO_2 by 2,138,917.79 tons, SO2 by 27,531.69 tons, NOx by 6,217.59 tons, and PM by 68,057.78 tons. Seven workshops on energy management were organized with over 200 participants. Five workshops on project appraisal and management were organized and about 180 people were trained.
Lead Organisation(s)	Ministry of Finance (MOF), National Development and Reform Commission (NDRC), State Development & Investment Corporation (SDIC)
Contact	Ms.DuanXiumei, Duanxm@guaranty.com.cn

Best Practice Official Name	**Pilot Case of Carbon-neutral Tea Production in China**
Summary /Description	Tea is one of the most important agricultural products, which is high value-added in the world. Since tea production is extremely sensitive to the climate change, it is particularly important to enhance the adaptive capacity for climate change. In this contribution, current adaptation and mitigation measures for tea productions in China were summarized. Meanwhile, the life cycle assessment methodology (LCA) is employed for accounting the cradle-to-retail greenhouse gas emissions of tea production, in order to provide the scientific basis for adopting feasible offset measures to achieve carbon neutrality for certification.
Achievement	The practice contribution would provide effective scientific proofs for public participating in the low-carbon emission reduction actions, and promote the implement of agricultural actions for the climate change. Through this contribution, the demonstration districts of carbon-neutral tea production are built, the institutional and technological innovations are promoted. Meanwhile, low-carbon tea production can achieve carbon sequestration of atmospheric CO_2 and reduce greenhouse gas emissions at the beginning of the tea industry value chain.
Lead	Institute of Environment and Sustain Development in Agriculture, CAAS
Contact	Xiao'ou Chen, E-mail: sfs_zyhjc@most.cn



Best Practice Official Name	**China - Climate Smart Staple Crop Production Project**
Summary /Description	The Ministry of Agriculture and Rural Affairs, China applied "Climate Smart Staple Crop Production" project of Global Environment Facility through World Bank aiming to solve the high-input and low-efficiency problem in agricultural sector and draw lessons from international experience. Two counties situated at major typical grain production areas in Henan (wheat/maize) and Anhui Provinces (wheat/rice) were selected. Through integration and demonstration of key technologies on C sequestration and mitigation in crop production, innovation and application of supporting policies, promotion and dissemination of public knowledge, the project aims to increase the use efficiency of agricultural inputs (e.g. fertilizer, pesticides, irrigation water and agricultural machine), decrease crop system greenhouse gas emission and increase soil carbon sequestration, establish smart climate crop production system, promote the transformation of agricultural product model in China, provide experience and set an example for how the ecosystem of cropland coping with climate change.
Achievement	By the end of 2018, the cumulative emissions reduction of greenhouse gases was 20754.66 ton of CO_2-eq, and carbon sequestration was 54458.54 ton of CO_2-eq. In 2018, crop yield per unit increased by 6.2%, net income of farmers increased by 10.84% in average. The project technology covered crop planting area 4437.6 hectares, professional cooperation organization service covered crop planting area 1967 hectares. 1967 tons of fertilizer and 437 kilograms pesticide was reduced, 822000 tons of water was saved. 30 village-level training platforms were established and more than 20000 people*day was trained, of which 8673 are women. More than 13000 farmers adopt project technology, including 7599 women. It can be seen that actives in the project area have a positive impact on the quality of surface water, and it reduced the amount of non-point pollution discharging to water bodies during the agricultural production process.
Lead Organisation(s)	Ministry of Agriculture and Rural Affairs, China The World Bank Global Environment Facility
Contact	Dr. Guan Dahai Rural Energy & Environment Agency, Ministry of Agriculture and Rural Affairs nplguan@126.com

Photo credit: Roland Marte Pixabay

Best Practice Official Name	**The Eastern and Middle Routes of the South-to-North Water Diversion Project – Phase I**
Summary /Description	The South-to-North Water Diversion Project (SNWDP) is a major strategic infrastructure for optimizing water resources allocation in China. Phase I of the eastern and middle routes of the SNWDP has been completed by the Ministry of Water Resources to effectively curb the serious environment deterioration caused by excessive water resources exploitation and utilization in the Huang-Huai-Hai Plain, to improve the water resources carrying capacity and the environmental quality along the routes, to ensure the ecological security, and to promote the green development along the related areas. The phase I of the eastern and middle routes deliver water to areas covering 243 counties (cities, districts) of 36 prefecture-level administrative regions in 6 provinces (municipalities) including Beijing, Tianjin, Hebei, Henan, Shandong, and Jiangsu.
Achievement	Since the beginning of water diversion by the eastern and middle routes of the SNWDP, the operation is stable, water amount is reliable, and the water quality is stable with high standards. It has effectively supported the economic and social development of the water-receiving areas and has promoted the construction of ecological civilization. By April 29, 2019, the project has transferred a total of 24.995 billion cubic meters water, of which 3.662 and 21.133 billion cubic meters has been transfer by the eastern and middle routes, respectively. It has benefited more than 100 million people as well as the economy, society and ecology. The water-receiving areas along the routes have effectively curbed the rapid decline of the groundwater levels in the Huang-Huai-Hai Plain by reducing groundwater exploitation, directing water replenishment, and replacing of the occupied environmental water. The groundwater level in the plain area has rebounded remarkably, and the aquatic biodiversity of rivers and lakes has recovered gradually. The continuous improvement of the environment due to this project plays an important role in enhancing the capability of water resources management and regulation under climate change.
Lead Organisation(s)	Chinese government. This project is led by the Ministry of Water Resources, involved by relevant departments and implemented by the South-North Water Diversion Project Management Organization.
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Comprehensive Management Project of Mulanxi River**
Summary /Description	From 1999 to 2017, the Putian Municipal Government of Fujian Province, China, has conducted the regulation of flood channel of the Mulanxi River. The riverway treatment adopts the three-in-one river regulation mode of "flood protection, ecological management and cultural landscape", and keep the combinations of safety and ecology, pollution control and water running as well as landscape and culture. The project is carried out in a holistic management way in the whole basin from the water to land, the downstream to upstream, the main stream to tributaries, and the central parks are also constructed.
Achievement	Through the implementation of comprehensive management, the Mulanxi River Basin has not experienced any major flood disaster for more than 10 years. 200,000 ha of plains, more than70 administrative villages and nearly one million people in the downstream are no longer suffering from floods. The project adopts a holistic approach to conserving mountains, rivers, forests, farmlands, lakes and grasslands and strengthens planting and afforestation. As a result, the center of Putian still retains 65 square kilometers of urban ecological green core, 60,000 ha of litchi forest belt and with forest coverage rate of 60.05%. In 2017, the total GDP of Putian reached 204.5 billion China Yuan, 7 times more than that in 1999, and the GDP per capita increased by nearly 30,000 China Yuan.
Lead Organisation(s)	Directed by the Ministry of Water Resources of China, implemented by the Fujian Provincial Government and relevant local governments
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**The River & Lake Chief System**
Summary /Description	Based on long-term practice in management of rivers and lakes, the Chinese government issued a guideline on the full implementation of the River Chief System in 2017. In 2018, the Lake Chief System was issued. Then, the River & Lake Chief System is innovatively promoted and implemented nationwide. The main leaders of the central and local governments and party committees serves as the "River & Lake Chief". The main objectives of this system are to protect water resources, prevent water pollution, improve water environment and restore water ecology. The comprehensive River Chief System has been built up at four different administrative levels including provincial, city, county and township levels. The system will establish a river & lake management and protection mechanism with clear responsibilities, coordinated order, strict supervision and strong protection, to provide institutional guarantee for maintaining the health of rivers and lakes and realizing the sustainable use.
Achievement	By the end of 2018, 31 provinces (autonomous districts and municipalities) have identified more than 300,000 river chiefs at province, county and town level, and more than 930,000 at village level; 24,000 lake chiefs of four levels have been appointed, 33000 of whom are at village-level. Since the establishment of the River & Lake Chief System, the effectiveness can be observed apparently. The water quality of some rivers and lakes in the country has improved significantly. River ecological restoration has been promoted significantly. As results, the carrying capacity of rivers and lakes was increased, protection of the ecological flow of rivers and lakes is strengthened, and the adaptive capacity of ecosystems to climate change was enhanced.
Lead Organisation(s)	Chinese government, the Ministry of Water Resources (leader), relevant departments of the State Council (participant), local governments at various levels (implementer).
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Adaptive Operation of Reservoirs Groups in the Yangtze River under Changing Climate**
Summary /Description	Affected by the Super El Nino event, the rainfall in the Yangtze River Basin in China was concentrated and intensified in 2016, causing severe storm flood. The most serious floods since 1998 have occurred in the middle-lower Yangtze area. The highest water level of main stream downstream Jianli has exceeded the flood warning water level and several tributaries suffered from extreme floods as well. During the extreme floods in the middle and lower reaches of the Yangtze River in 2016, the Chinese government issued flood control instructions through joint operation, operated the Three Gorges Reservoir and the upper and middle reaches reservoir groups holistically, and jointly intercepted the flood and reduced the peak. Triggered by the successful control of 2016 extreme flood, joint operation of the reservoirs in the middle and upper reaches of the Yangtze River stepped forward to the standardization stage, which will greatly enhance the ability of the Yangtze River Basin to cope with extreme hydro-meteorological events in the context of climate change.
Achievement	Through the scientific and refined operation, reservoir groups in the Yangtze River intercepted 22.7 billion cubic meters of flood in 2016. The water levels of Jingjiang reach, Chenglingji vicinity and the lower reaches of Wuhan were reduced by 0.8~1.7 meters, 0.7~1.3 meters and 0.2~0.4 meters respectively, and the length of dikes with a water level exceeding the warning water level was reduced by 250 kilometers. The flood control pressure in Chenglingji reach and Dongting Lake area, which are located in the middle reaches of the Yangtze River, has been effectively reduced. The joint operation achieved the goal that the overcoming of warning water level in Jingjiang reach and the flood diversion in Chenglingji region had been avoided, the water level of Lianhuatang did not exceed the guaranteed water level. The joint operation avoided flooding of more than 500,000 ha of cultivated land and transfer of more than 380,000 people, which ensures the safety of people's lives, security of important embankments and facilities, and properly coped with the impact of extreme climate phenomena.
Lead Organisation(s)	The Ministry of Water Resources of China, Changjiang Water Resources Commission, Three Gorges Corporation
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Water Regulation in the Pearl River during the Drought Period**
Summary /Description	Since 2000, saltwater intrusion in the Pearl River Estuary has intensified, primarily because of the prolonged drought period of the Pearl River Basin, channel incision and increased water demand. The impacts have spread from, Dongguan, Zhongshan, and Zhuhai to Guangzhou , as well as from agricultural production to industrial and domestic water supply. In consequence, the life of approximately 15 million people including those living in Macao and Zhuhai has been affected greatly, associated with stressed social stability. From 2005 to 2019, the Pearl River Water Resources Commission, affiliated agency of the Ministry of Water Resources of China, adopted a guideline of "total quantity control, fine-tuned regulation" and a strategy of "monthly plan, ten-day's dispatch, weekly adjustment and daily tracking". Using this approach, 15 consecutive water regulations in drought period (drought period spanned from October to next February) were carried out, according to forecasted water regimes. By storing water ahead of drought period in the upstream reservoir group and increasing discharge in the drought period, the saltwater intrusion was suppressed and water supply was ensured in the Pearl River Estuary area, especially in Macao and Zhuhai.
Achievement	During 15 water regulations in the Pearl River drought period (January 2005 to February 28, 2019), Macau and Zhuhai were able to take 1.014 billion cubic meters of water from the Pearl River, of which 414 million cubic meters of water with high quality was supplied to Macau. Ensuring security in the Pearl River Estuary, especially in Macao and Zhuhai, simultaneously benefited water supply, power generation, shipping and ecology. This further guaranteed economic and social development in this region and the wellness of people, and ensured long-term prosperity and stability of Macao.
Lead Organisation(s)	Ministry of Water Resources of China; Pearl River Water Resources Commission; Guangdong Provincial Water Resources Department; Guangxi Autonomous Region Water Resources Department; Maritime and Water Affairs Bureau of the Macao Autonomous Region; China Southern Power Grid; China Datang Corporation
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Construction of Green Small-Scale Hydropower in Zhejiang Province**
Summary /Description	Zhejiang Province promotes the construction of green (eco-friendly) small-scale hydropower infrastructure, according to the decision made by the government on promoting green development and energy revolution. Small hydropower stations could play an important role in protecting the environment, ensuring energy conservation and reducing emission load under this measure. Since 2017, Zhejiang Province has successfully built 38 such facilities, ranking the first in China at present, innovative measures being introduced to create a basin-type "green small hydropower" system. In addition, Zhejiang Province has promoted the construction of rural hydropower ecological demonstration zones and completed 34 of them.
Achievement	Zhejiang Province has solved the regional power shortage problem and reduced greenhouse gas emission by conducting green small-scale hydropower projects. The Province also upgraded and renovated the existing small hydropower infrastructure, implemented their operation in an ecological way, fulfilled ecological water demand in the whole basin, and continuously improved the river ecosystem condition. In Anji, Huzhou, the average annual power generation income of the power station increased by more than 2 million China Yuan, and the river network ecosystem of the county has been effectively improved after the green renovation of small hydropower stations. The length of dewatering surface has been restored to 22.4 kilometers, and the water surface area has been restored to 290,100 square meters.
Lead Organisation(s)	Local government, Hydropower enterprise
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Integrated of Urban and Rural Water Supply Project in Sihong, Jiangsu Province**
Summary /Description	In order to meet the requirement that rural areas should have the same water supply standard as the urban areas in terms of the same water source, network, quality and services, Sihong, Jiangsu Province undertook a project to retrofit the pipe network of towns and villages by constructing large-scale water treatment plants. This project realized the integration of regional water supply and thoroughly solved the unstable water supply problems in rural areas. During the project, between June 2015 and June 2016, a purification plant with a capacity of treating 150 thousand tons of water per day was built; a water diversion facility associated with 6 booster stations were finished; and a drinking water distribution network with 306 kilometers long and a raw water pipe network of 68 kilometers were paved. An investment of 1.379 billion China Yuan was used for this project. With the above mentioned new constructions and along with the existing pipe network of 8800 kilometers, the project established a water supply system covering each village and household.
Achievement	Applying integrated management from source water to faucets, Sihong County coordinated the regional water supply and rural drinking water safety projects to ensure seamless docking of the water source, water plants, pipe network and household entry. At the end of December 2016, Sihong County completed the regional water supply project, leading to 100% of villages and 95% of rural households being covered by the regional water supply system. The quality of supplied water has been obviously improved, which has been praised by local people.
Lead Organisation(s)	Local government, Water supply corporations, Water investment corporations
Contact	ghyc@mwr.gov.cn

Best Practice Official Name	**Case Study of Urban Ecological Restoration in Xuzhou City**
Summary /Description	A comprehensive survey on ecological space and ecological factors such as mountains, rivers, wetlands, green spaces and woodlands within the selected urban planning area was undertaken by the Xuzhou City with the GIS technology, followed by a symposium on urban ecological restoration to analyse the main existing ecological problem, its origin and scale, and to identify and analyze from the regional space perspective. There are three categories in general: First, the strictly protected area refers to that strict protection is needed in areas where ecosystem, ecological resource and function are well maintained. Second, the area in need of natural restoration refers to that human intervention should be minimized so as to allow nature to work and gradually restore its original ecological functions in areas where ecosystems and natural resources are at risk of being destroyed or ecological function is deteriorating. Third, artificial restoration. Regions where ecosystems and natural resources have been destroyed or ecological function is deteriorating should be identified as the focus of urban ecological restoration, and restoration objectives and tasks relevant to various ecological space and factors have been put forward.
Achievement	Effective improvement in environmental quality: Xuzhou City Ecological Restoration Landscape Enhancement Project, as a municipal key project, optimized the plant landscape design, improved the greening quality and the convenience facilities, thus effectively improving environmental quality in neighbouring areas. Promotion of social and cultural development: Ecological restoration in Xuzhou City has created a fresh and beautiful living atmosphere for its citizens, and reflected the implementation of the government's measures to expand urban green space, thus playing a positive role in maintaining social harmony and stability. Boosting tourism and regional economy: Taking the Wetland Park in the mining subsidence area of Pan'an Lake as an example, ecological restoration boosted development of gardening, ecological tourism, folk culture and other industries, increased more than 2,000 jobs for local villagers. In 2018, the site received 5 million tourists, with comprehensive revenue of 1 billion yuan.
Lead Organisation(s)	Center of Science and Technology & Industrialization Development of Ministry of Housing and Urban-Rural Development Xuzhou Housing and Urban-Rural Development Bureau (Municipal Gardens Bureau
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Best Practice Official Name	**Marine Disaster Assessment and Adaptation in Coastal Areas under Sea Level Rise**
Summary /Description	In recent years, China has actively participated in global ocean governance and actively carried out multidisciplinary cooperative research on natural environment and social-economic impacts to jointly cope with sea level rise. In 2018, the National Marine Data and Information Service (NMDIS) undertook a project entitled "Marine Disaster Assessment and Adaptation in Coastal Areas under Sea Level Rise" sponsored by the Special Cooperation Fund for the Asian Region. The project lasts for two years as part of the regional cooperation thematic research involving government-driven activities China participating in under the Asian Regional Cooperation Mechanism. The project conducts combined sea level change analysis and projection in the South China Sea and the East Indian Ocean, and carries out marine disaster risk assessment and adaptation research in Thailand and Sri Lanka. Meanwhile, standard specifications for sea level observation, sea level data processing and quality control, and marine disaster assessment are set.
Achievement	In September 2018, NMDIS hosted the first training course of the Ocean Teacher Global Academy (OTGA) Tianjin Training Center, attended by 25 participants from 10 countries in the Western Pacific region. In November 2018, NMDIS hosted the ASEAN Regional Forum (ARF) International Symposium. Scientists and officials from 10 countries including Thailand and Australia discussed the regional sea level rise adaptation and response, coastal disaster impacts, risk assessment and so on comprehensively. Meanwhile, the representatives appealed the ASEAN Regional Forum member countries to strengthen fundamental research, risk assessment, communications and cooperation in the field of sea level change with an official proposal. The implementation of the project will help improve the marine disaster prevention and mitigation capabilities of the participating countries, further deepen the regional bilateral and multilateral cooperation and communications in the maritime field, and provide strong support for the construction of the 21st Century Maritime Silk Road.
Lead Organisation(s)	National Marine Data and Information Service
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Best Practice Official Name	**Abandoned Shrimp Pond Reforestation and Sustainable Development**
Summary /Description	The construction of shrimp ponds has resulted in significant loss of coastal wetlands and biodiversity, while shrimp ponds are often abandoned after a few years due to illness. Restoring abandoned shrimp ponds and recovering the structure and function of ecosystems contribute to carbon dioxide absorbing, the livelihoods improvement. The shrimp ponds have been transferred to mangroves or coastal marshes in China. By releasing marine creatures including crabs, shellfish, worms, fish and shrimp into them, semi-natural ecosystems are created. The systems are absorbing GHGs, and continuously producing ecological products, discharging eggs and larvae to the sea.
Achievement	Projects have been implemented in Panjin, Beihai, Hainan of China, coastal ecosystems are restored.
Lead Organisation(s)	Ministry of Natural Resources, China
Contact	Zhao Peng, zp-zp@163.com

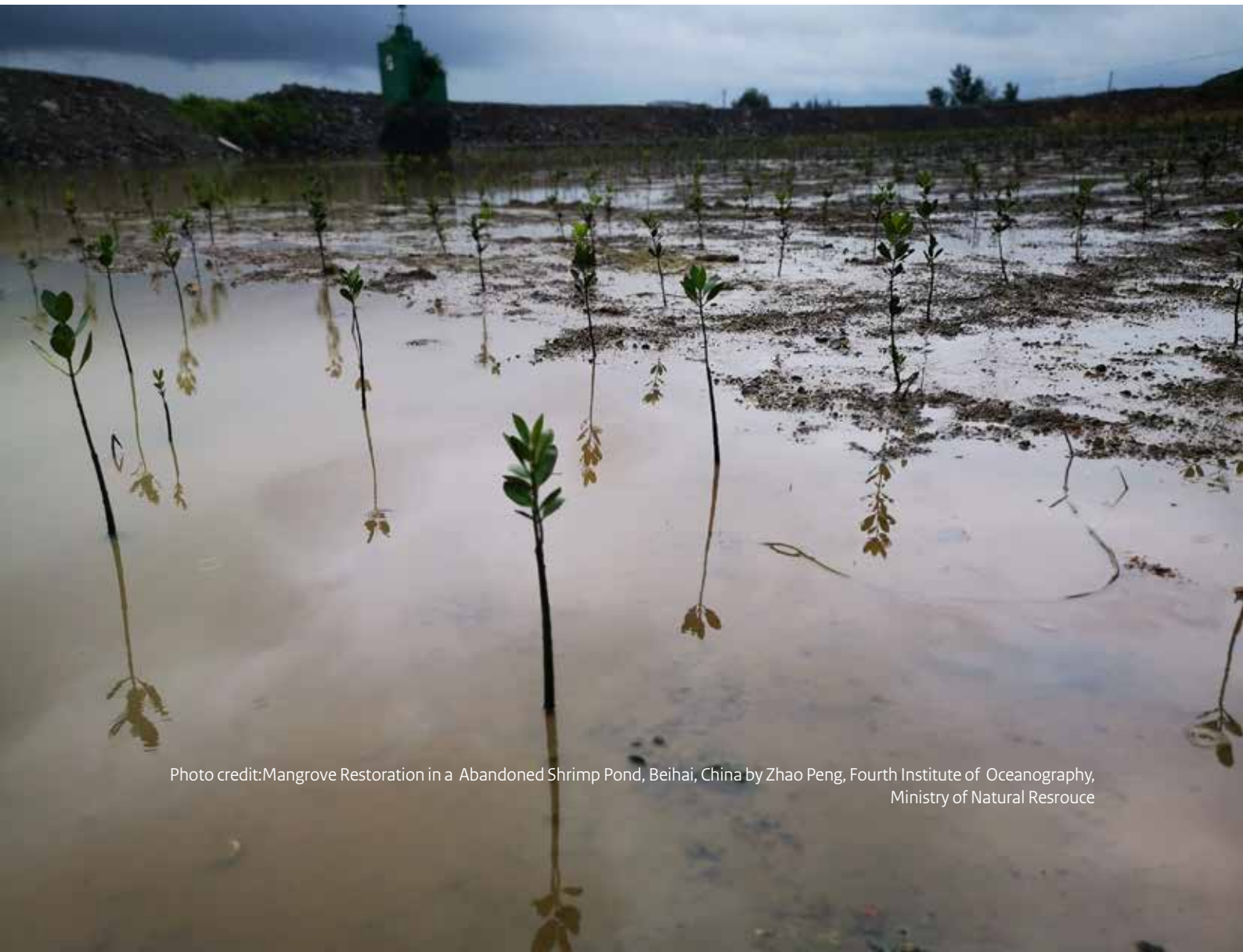

Photo credit:Mangrove Restoration in a Abandoned Shrimp Pond, Beihai, China by Zhao Peng, Fourth Institute of Oceanography, Ministry of Natural Resrouce

Best Practice Official Name	**Seagrasses Restoration and Fishery Recovery**
Summary /Description	Seagrass is the only angiosperm on earth that can completely live in seawater. It is also known as the three typical offshore marine ecosystems with mangroves and coral reefs. It has important ecological functions, such as sequestrating CO_2, maintaining biodiversity, fixing beaches. Human activities have caused serious degradation of seagrasses globally, and some seagrass beds have even appeared "desertification". In recent years, protection and restoration of seagrass beds has become a recognized hotspot in the world. At present, seagrass restoration projects have been carried out in Weihai, Dongying, Qingdao, Hebei Tangshan, Guangxi Beihai and other places of China, providing good habitats and foods for marine animals and birds as well as sequestrating CO_2.
Achievement	Seagrass restoration projects have been carried out in Weihai, Dongying, Qingdao, Hebei Tangshan, Guangxi Beihai and other places of China, providing good habitats and foods for marine animals and birds as well as sequestrating CO_2.
Lead Organisation(s)	Ministry of Natural Resources, China
Contact	Zhao Peng, zp-zp@163.com

Best Practice Official Name	**Carbon Neutral Project for BRICS Leaders Xiamen Meeting**
Summary /Description	In September, 2017, the 9th meeting of the BRICS leaders was held in Xiamen. In August 2017, The carbon neutral project was launched by the Xiamen Municipal Government. The project will neutralize the greenhouse gases generated during the meeting by planting mangroves. The carbon neutralization project reflects China's determination to promote a low-carbon economy and sustainable development optimizes the ecological environment as well as enhances the sense of well-being of the people. Xiatanwei Mangrove Coastal Wetland Ecological Park is one of the marine ecological restoration projects in Xiamen. The total planned area is about 404 hectares. It is planned to plant about 80 hectares of mangroves. It will be implemented in two phases. After completion, it will be a mangrove wetland ecological park with unique characteristics of tourism, leisure and entertainment.
Achievement	The second phase of the Xiatanwei Mangrove Coastal Wetland Ecological Park was started in December 2016 and is expected to be completed in 2020.
Lead Organisation(s)	Ministry of Natural Resources, China
Contact	Zhao Peng, zp-zp@163.com

Best Practice Official Name	**Comprehensive Monitoring and Forecasting of Marine Ecological Disasters**
Summary /Description	Monitoring marine ecological disasters, such as red tides and green tides, caused by environmental factors such as climate change, extreme weather events, environmental pollution and changes in marine habitats; Investigate the coastline and ecological environment of the ecological seawall engineering area, and determine the functional elements and spatial allocation of the ecological seawall according to local conditions, including coastal topography, coastal natural vegetation, beach and so on. The long-term characteristics of marine ecosystems and early warning of major marine ecological and environmental disasters should be forecasted, and the comprehensive monitoring, risk identification and forecasting and early warning capabilities of marine ecological disasters should be improved to provide basic guarantee for the protection of marine ecological environment.
Achievement	Aimed at the red tide, green tide and some other marine ecological disasters, some monitoring, warming and forecasting systems have been carried out, for example the prediction of red tide formation conditions, numerical prediction of drift and diffusion, the prediction under flood season, the annual trend prediction. In order to provide forecast and assessment services for coastal erosion, oceanic acidification, and seawater hypoxic, a high resolution marine ecosystem numerical forecasting system covered ocean, offshore and inshore has been conducted. The middle and long-term trend forecasting systems for major marine ecological disasters in the Northwestern Pacific ocean and China adjacent seas have been launched. Cooperation with the local departments in different sea areas, the comprehensive forecasting and assessment information services have been made to provide technical support for the national and local management and decision-making departments.
Lead Organisation(s)	National Marine Environmental Forecasting Center, Marine Environmental Forecasting Division
Contact	Shan Gao: Tel:+86-10-62105769; Email: 57883590@qq.com Address: No.8 Dahui Temple Road, Haidian District, Beijing

Best Practice Official Name	**Marine Atmospheric Greenhouse Gas Monitoring in Offshore**
Summary /Description	CO_2 and CH_4 are the most important greenhouse gases in terms of their abundance and contribution to greenhouse effect. By knowing the variation characteristics and main influence factors we can formulate scientific policies to reduce greenhouse gas emissions and adapt to climate change. Based on greenhouse gas analyzers (GGA, Greenhouse Gas Analyzer of Los Gatos Research), NMEFC installed four instruments of continuous measurement of atmospheric CO_2 and CH_4 in the islands located in the East China sea and the South China sea. Relying on the Marine environmental monitoring center in each sea area, we obtained the continuous data of atmospheric CO_2 and CH_4 since December 2013. This work is of great value to the field of emission-reduction, marine environmental protection and tackling climate change.
Achievement	We obtained the long-term continuous data of atmospheric greenhouse gas in the east China sea and the south China sea. Combined with real-time meteorological data and the numerical models, we mastered the temporal and spatial variation rules of atmospheric CO_2 and CH_4 and the main influencing factors preliminary. We also discussed the relationship between greenhouse gas and global climate change. Meanwhile, we provide theories and data support to the relevant departments.
Lead Organisation(s)	Air-sea Interaction Research Group
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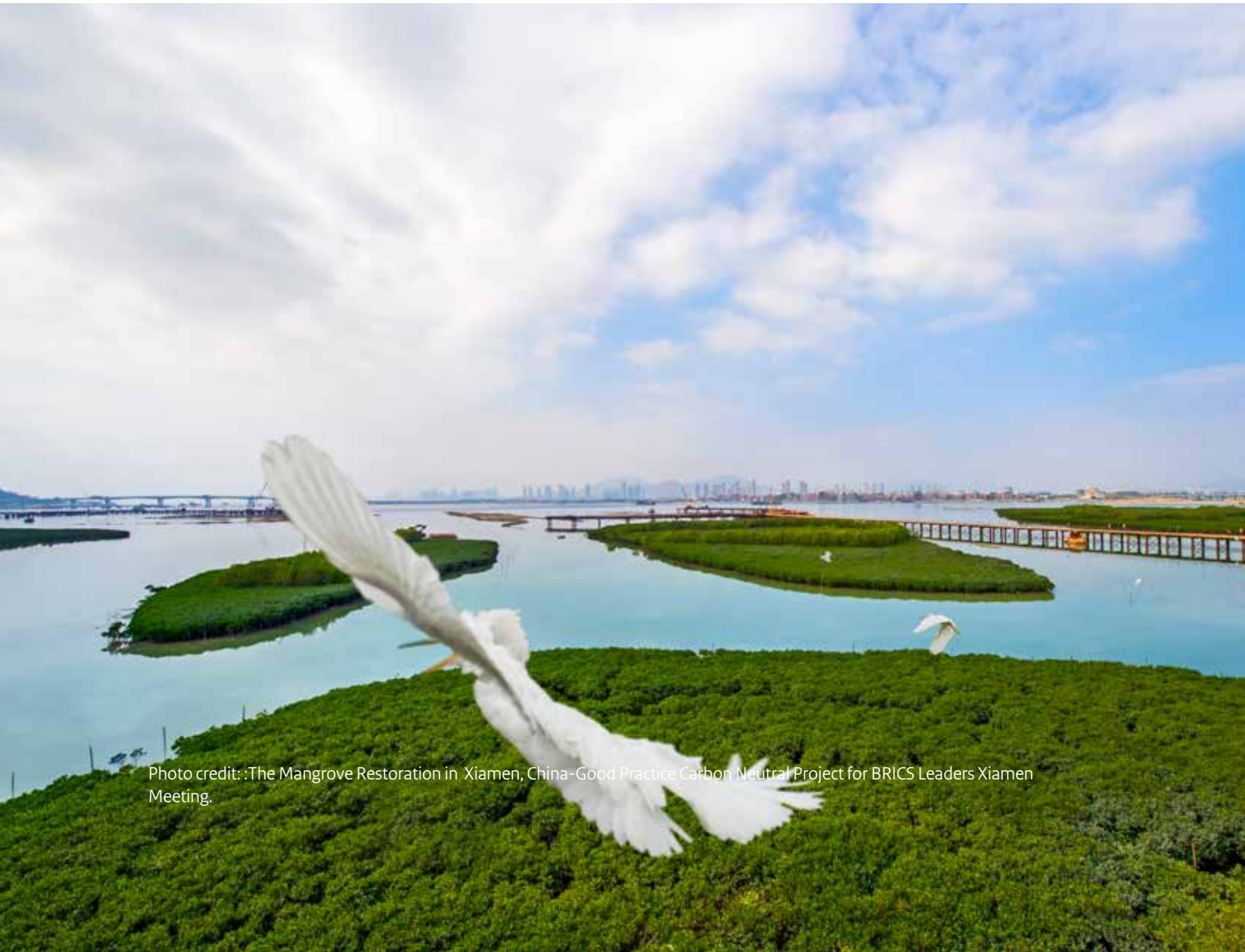

Photo credit: :The Mangrove Restoration in Xiamen, China-Good Practice Carbon Neutral Project for BRICS Leaders Xiamen Meeting.

Best Practice Official Name	**Ecological Poverty Alleviation: "Happy Homeland E-Tree Planting"**
Summary /Description	Land degradation/desertification in western China and regional poverty caused by this has become the most serious issue in alleviating poverty and realizing sustainable development. The best solution is to integrate government resources with social resources. The China Green Foundation (CGF) has been working on ecological construction and charity afforestation program for many years. Given the fact of the undeveloped economy, harsh ecological environment, and poor livelihood in western part of China, and after investigations, an ecological poverty alleviation program: Happy Homeland e-Tree Planting was launched in 2007. The program is formed with the basis of previous practice experience and CGF's advantage, attracting support from all parties in the society to participate in ecological environment protection and poverty alleviation to assist local poor people to plant economic trees, promoting poverty alleviation and ecological environment protection, and realizing the sustainable development with a harmonious relationship between man and nature.
Achievement	A new development model of "public interest institutions + donors + government + farmers + enterprises" has been established in the program through joint construction, co-governance and participatory. Over the past decade, the project has attracted more than 35 million donations with the social donation funds accumulating more than 55 million yuan, meanwhile, over 1.5 million trees were planted in poverty-stricken area in western China (Sea buckthorn in Gansu, Adinandra nitida Merr.ex H.L.Li in Guangxi, and Chinese wolfberry in Ningxia), with more than 7,333 ha of barren mountains and wasteland afforested. As a result, the ecological environment has been well protected in the arid regions of the Western China, more importantly, the farmers' income has been raised, and regional economy has developed. Above all, the sustainable development between human beings and nature has been realized.
Lead Organisation(s)	China Green Foundation
Contact	Department of International Cooperation, NFGA , China

Best Practice Official Name	**Forest Management and Afforestation for Sand Prevention and Desertification Control in Saihanba Forest Farm in Hebei Province**
Summary /Description	In 1962, the former Ministry of Forestry of China decided to establish Saihanba Forest Farm. For more than half a century, several generations of Saihanba people have worked hard and tirelessly to build the world's largest artificial forest farm in the plateau desert with sparse forests, serious wind and sand storms, and cold and dry weather condition, creating a miracle, turning wasteland and sandy land into forests and oases.
Achievement	At present, the area of forested land in Saihanba Forest Farm has increased from 240,000 mu to 1.12 million mu. The forest coverage rate has increased from 12% (the early stage of the forest farm) to 80%, and the stocking volume has increased from 330,000 m3 to 10.12 million m^3. Compared with the initial stage of the forest farm, the microclimate in Saihanba and its surrounding areas has been effectively improved, forest ecological functions such as carbon sequestration have been significantly enhanced, and the economic benefits of forest tourism and other related industries have been significantly increased.
Lead Organisation(s)	Department of State-owned Forest Farms and Seedlings Management, NFGA, China
Contact	Department of International Cooperation, NFGA, China

Best Practice Official Name	**Scientific Forest Management in Chongyi County of Jiangxi Province to Promote Ecological Protection and Restoration**
Summary /Description	In 1993, Chongyi County introduced and adhered to the international advanced concepts in forest ecological protection and rehabilitation as well as scientific management in light of local realities, to explore the promotion of scientific forest management. Since 2013, the construction of national demonstration base of forest management has been fully carried out.
Achievement	The forest resources in the county have increased significantly, and the quality has improved remarkably. Specifically, the forest coverage rate has increased from 87.3% at the end of 2013 to 87.56% at the end of 2017; the stocking volume has increased from 13.86 million m3 to 16.09 million m3; the stocking volume of arbor forest per unit area increased from 103.1 m3/ha to 124.5 m3/ha. The ability of forests to mitigate and adapt to climate change has increased significantly.
Lead Organisation(s)	Department of Ecological Conservation and Restoration NFGA, China
Contact	Department of International Cooperation, NFGA, China.

Best Practice Official Name	**Phase II of Beijing-Tianjin Sandstorm Source Control Project**
Summary /Description	In order to improve and optimize the ecological environment quality of Beijing and Tianjin area, control desertification land and curb dust hazard, the state initiated the implementation of the Phase I of Beijing-Tianjin Sandstorm Source Control Project (2001-2012) in June 2000. In 2012, the State Council passed the Planning of the Phase II of Beijing-Tianjin Sandstorm Source Control Project (2013-2022). The scope of the Phase II Project covers 138 counties (banners, cities, and districts) of six provinces (autonomous regions and municipalities) in Beijing, Tianjin, Hebei, Shanxi, Shaanxi and Inner Mongolia. The total land area of the project area is 706,000 square kilometers, and the area of desertification land is 202,200 square kilometers.
Achievement	Through the Phase II of Beijing-Tianjin Sandstorm Source Control Project, the achievements of the Phase I Project have been basically consolidated. The total amount of forest and grass vegetation in the project area has been increased, and the desertification land control has achieved remarkable results, effectively controlling the expansion trend of desertification land, improving the ecological environment and further reducing sand and dust weather in Beijing and Tianjin area. The characteristic advantageous industries in the project area have begun to take shape, the self-development ability has been enhanced, grassland-livestock balance has been basically achieved, and the development level and quality of pasture animal husbandry have been significantly improved. Furthermore, the income of farmers and herdsmen in the project area has been steadily increased, and production and living conditions have been improved significantly. Quantitative assessment on the effects of mitigation and adaptation to climate change is not available so far.
Lead Organisation(s)	Department of Combating Desertification, NFGA, China
Contact	Department of International Cooperation, NFGA, China

Best Practice Official Name	**Key Techniques in the Management of Moso Bamboo Carbon Sink Forests**
Summary /Description	"Assessment of Bamboo Forests' Ecological Functions and Technologies for Maintaining Their Productivity", one of China's 11th Five-Year Science & Technology Supporting Projects, presented high density, good model, proper fertilization, less tillage and delayed harvesting as key elements in managing bamboo carbon sink forests. Sponsored by the Agricultural Scientific and Technological Results Commercialization Funds of China's Ministry of Science and Technology, a study to improve and mature these techniques was conducted on low-productivity, low-efficiency moso bamboo forests and landscape bamboo forests in Huangshan City, Anhui Province and Jinggangshan City, Jiangxi Province respectively, to explore the optimal density, soil management practices and harvesting schemes. An appropriate model for the management of moso bamboo carbon sink forests was selected and then adopted in demonstration, which effectively improved bamboo forests' carbon sequestration performance, increased their carbon storage, bettered their ecological functions, improved the stability of their ecosystems, and contributed to increased production of bamboo materials.
Achievement	Bamboo forests grow fast, score high on comprehensive benefits, excel in carbon sequestration and can be sustainably utilized. The project gave full play to these beneficial traits, with objectives to increase bamboo forests' carbon storage and improve their economic production. Working on key elements, including density, fertilization and tillage, the project put forward optimal management practices in terms of bamboo density, stand structure and nutrient management for bamboo forests in different site conditions and developed technical specifications for managing moso bamboo carbon sink forests. Demonstration and promotion showed evident improvement on stand structure and ecological functions. In the process, 1036 mu of demonstration moso bamboos were planted with an added economic gain of 609,000 RMB and sequestrated carbon worth 7.86 million RMB. The project achieved its objectives by increasing both the carbon storage and economic production of bamboo forests, proving its techniques to have good application prospects.
Lead Organisation(s)	International Centre for Bamboo and Rattan (ICBR)
Contact	Department of International Cooperation, National Forestry and Grassland Administration of China

Best Practice Official Name	**Desertification control in Youyu County**
Summary /Description	In order to improve the worsened ecological environment of Youyu County in Shanxi province, desertification and afforestation have been controlled since the early 1950s. After the reform and opening-up of China, the ecological situation has been greatly improved through kinds of national ecological projects.
Achievement	After 70 years, the ecological situation has been greatly improved through the persistent efforts in Youyu County. A barren land covered with yellow sand has become an oasis. It has been basically formed a broadleaf-conifer ecological shelterbelt system with the combination of trees, shrubs and grass in the form of reticulation, ribbon and flake. The capacity of mitigation and adaptation to climate change has been significantly enhanced. With the continuous increase of forest and grass resources, the ecological environment not only has been significantly improved, but also has driven the development of ecological industry and promoted the adjustment of local industrial structure.
Lead Organisation(s)	Department of Ecological Conservation and Restoration, NFGA, China
Contact	Department of International Cooperation, NFGA, China

Best Practice Official Name	**Comprehensive Treatment Project of Stony Desertification in Karst Area**
Summary /Description	Stony desertification is the most serious ecological problem in the karst area of southern China, affecting the ecological safety of the Pearl River and the Yangtze River, and seriously restricting the sustainable economic and social development of the region. The Party Central Committee and the State Council attach great importance to the prevention and control of stony desertification. In 2008, the State Council approved the Outline of Comprehensive Treatment Planning for Stony Desertification in Karst Areas (2006-2015). In order to further accelerate the stony desertification treatment and restore the ecological environment of stony desertification areas as soon as possible, the National Development and Reform Commission, the National Forestry and Grassland Administration, the Ministry of Agriculture, and the Ministry of Water Resources jointly issued the "Thirteenth Five-Year" Construction Planning for the Comprehensive Treatment Project of Stony Desertification in Karst Area in 2016, which involves 455 stony desertification counties (cities and districts) in 8 provinces (autonomous regions and municipalities) including Guizhou, Yunnan, Guangxi, Hunan, Hubei, Chongqing, Sichuan, and Guangdong.
Achievement	According to the plan, by 2020, the karst land of not less than 50,000 square kilometers and the stony desertification of not less than 20,000 square kilometers will be treated, the construction and protection area of forest and grass vegetation will be 1.95 million hectares, and the coverage of forest and grass will be increased by more than two percentage points; the regional soil erosion will continue to decrease, the expansion of stony desertification land will be basically contained, the karst ecosystem will be gradually stabilized, the land use structure and agricultural production structure will be continuously optimized, and the growth rate of per capita net income of farmers in the project area will be higher than the national average level, the ecological and economic development environment will be steadily improved, and the rural economy will gradually step into a stable, coordinated and sustainable development. Quantitative assessment on the effects of mitigation and adaptation to climate change is not available so far.
Lead Organisation(s)	Department of Combating Desertification, NFGA, China
Contact	Department of International Cooperation, NFGA, China

Best Practice Official Name	**Foreign Aid Training for China's Desertification Control**
Summary /Description	China is a party to the UN Convention to Combat Desertification (hereinafter referred to as the "UNCCD"), and the National Forestry and Grassland Administration (formerly the State Forestry Administration) is responsible for the implementation of the UNCCD at the national level. Internationally, China's implementation of the UNCCD in is known as the "three most", i.e. it is one of the countries with the largest desertification area; it has the biggest population affected by desertification; and it has the most remarkable achievements in desertification control. In order to promote China's mature experience and technology in desertification control, as well as help developing countries, especially Africa countries and countries along the "Belt and Road" by this phase, to improve the effectiveness of desertification control, and to promote the development of global desertification control, the National Forestry and Grassland Administration provides foreign aid training courses on desertification control in China. The training is under the framework of China's foreign aid training and relying on qualified units such as Gansu Desert Control Research Institute and International Centre for Bamboo and Rattan.
Achievement	The foreign aid training course on desertification control focuses on teaching and exchanging practical technologies for prevention and control of desertification, improving the function of desert ecosystems through desertification control, increasing vegetation coverage in desertification areas, and increasing the carbon sequestration capacity of desertification land. Quantitative assessment on the effects of mitigation and adaptation to climate change is not available so far. By increasing the desertification control capacity of the target countries of the training, it will indirectly help increase the vegetation coverage in the desert areas, improve the ecological environment, and enhance the social and economic development capabilities of relevant countries and regions. Currently, there is no quantitative assessment of the positive impact on the socio-economic environment of the target countries.
Lead Organisation(s)	Department of Combating Desertification, NFGA, China
Contact	Department of International Cooperation, NFGA, China

Best Practice Official Name	**Establishing a Robust Regime for Marine Ecological Protection in Rizhao, Shandong Province**
Summary /Description	Rizhao is a port city on the Yellow Sea with a coastline of 168.5 kilometers, 5,000 hectares of tidal flat, and 6,000 square kilometers of sea area. The city has made vigorous efforts to cope with climate change and made significant progress in protection and utilization of marine resources. Rizhao has set up an ocean-land integrative model that gives equal importance to the governance of river, sea, and land ecosystems, and introduced a whole set of protective measures. first, ensuring effective implementation of ocean-related policies by strengthening marine authorities' role and responsibilities in urban planning, embankment construction, and coastal area governance; second, striking a balance between preservation and utilization to increase marine ecological sustainability; third, taking an ocean-land integrative model to address land-based pollution by restoring ecosystems in coastal wetlands and outfalls; and fourth, vigorously promoting public educational programs to raise citizen awareness. Under the ecological red-line regime, Rizhao has delineated 26 red-line zones covering 83.58 thousand hectares, about 13.9 percent of the sea areas under its municipal jurisdiction. It is one of the first Chinese cities to introduce a marine damage compensation mechanism and to set up a real-time marine-monitoring regime of 10 well-rounded monitoring networks distributed across 95 sites. Meanwhile, the city has delineated a marine farm area of 66.7 thousand hectares composed of three national-level and eight provincial-level demonstration aqua-farm zones for different uses. Rizhao hosts one of the first national ocean parks and a national demonstration zone for marine ecological development. The city has been well on its way to achieve the goal of reducing carbon intensity by 20.5% for the 13th Five-Year Plan period.
Country	China

Best Practice Official Name	**Coordination of Ecological Restoration and Economic Development in Kubuqi Desert**
Summary /Description	The Kubuqi desert is the seventh largest desert in China. Adopting a four-wheel-driven approach that involves the government, enterprises, farmers, and technological innovation, remarkable progress has been made in Kubuqi desert's climate actions, alleviating desertification and raising people's incomes. Proactive measures were adopted to cope with climate change and desertification. First, providing government support and setting up a sustainable model giving equal importance to desertification prevention and wealth creation. A law on prevention and control of desertification has been enacted, desert ecological science and technology center set up, and the Northwest's largest germplasm repository launched. Financial authorities at all levels have provided preferential credit services for desert governance. Second, establishing an incentivizing partnership between citizens, the private sector, and the government. Elion foundation, a leading enterprise in Kubuqi's climate action, has established an industrial chain linking agriculture, manufacturing, and energy industry. It helped organize 232 desert governance task forces composed of 5, 820 ecological construction workers. 1,500 households have been engaged in desert tourism by providing various forms of services, Third, letting the market play its due role. Driven by market forces, enterprises and individuals have played a leading role in desert governance. Technological innovation has been catalyzed. More than 1,000 variants of cold-, drought, and saline-alkali- resistant plant seeds have been created and more than 100 planting techniques have been improved, which promote the viability of desert plants. Remarkable ecological and social benefits have been achieved. First, ecological resources have been increasing steadily. Vegetation coverage had increased substantially. Second, regional ecological systems have been improved. The sandstorm frequency has decreased, and biological diversity has been restored. Third, the growth of the desert circular economy has helped lift local residents out of poverty and improved people's livelihood.
Country	China

Best Practice Official Name	**Wind Power Development through Institutional Innovation and Scientific and Technological Breakthroughs**
Summary /Description	China is undergoing a revolution in energy production and consumption, vigorously developing new energy and renewable energy. Compared with 2000 when China had a wind-power installed capacity of 300,000 kw, China had an installed capacity of more than 180 million kw in 2018. Yet wind curtailment has long been a problem because wind is an intermittent power source, with a time gap between power generation and consumption. The sustainability of the longstanding practice of regularized price evaluation and subsidy has been cast into question as the government fiscal pressure is growing year by year. As the traditional pricing system has been phased out, the new energy subsidiary model has also become unsustainable. Market reform in the power industry is precipitating reforms in the new energy pricing regime and the adoption of green license has helped boost the development of the new energy industry. China has made a series of institutional and technological changes to ensure the sustainable development of new energy industries. First, putting in place a fair, transparent, and orderly green license trading regime to encourage market competition. Relevant government agencies jointly issued a Notice on the issuance and voluntary purchase of renewable energy green power certification in 2017 and launched the trading on quotas and green license mandatory restrictions. Second, creating a favorable environment policy for wind power. Power grid companies are encouraged to receive, store and transmit wind power. Third, boosting the economic efficiency of wind power sector through technological innovation. In this process, partnerships are developed between enterprises and academia, and between government and enterprises, putting the wind power sector on a sustainable and economic development path.
Country	China

Best Practice Official Name	**Three-North Shelterbelt Program**
Summary /Description	In order to address climate challenge, the Chinese government launched the Three-North Shelterbelt Program (TNSP), which aims to improve the ecological environment and increase the forest coverage in northwest, north and northeast China, covering 13 provinces, autonomous regions and municipalities with a total area of 4.069 million km2. A 72-year development plan has been formulated for the TNSP, in which the Program was divided into three stages to achieve the goal of increasing the forest cover from 5.05% to 14.95% by 2050. Public and private sectors, as well as international communities have worked together in effort of afforestation and jointly fought combat against desertification. While ensuring protection of the existing forest and grassland, afforestation efforts have been made to create a mix of wind breaks, sand fixation, soil and water conservation, shelter forest for farm land and pastures, firewood forest and non-wood product forest and put in place a shelter forest system with coordinated development of agriculture, forestry and husbandry. The project has greatly increased the forest coverage and effectively combated desertification and climate change impact in the program area, improved the overall situation of serious wind-sand hazards and soil erosion, enhanced the resilience and adaptability to natural disasters and climate change. The TNSP has also greatly improved the ecological environment in the region, increased grain output and made great achievements in the construction of forest product bases. Going forward, the Chinese government will continue with the TNSP program with the goal of increasing the forest area in the region to 33.558 million hectares and forest stock volume to 260 million cubic meters, and complete by and large the development of the ecological security shelterbelt in north China by 2020.
Country	China

Best Practice Official Name	**Ecological Preservation and Poverty Relief in Kezuo Houqi, Inner Mongolia**
Summary /Description	Kezuo Houqi of Tongliao city suffers the most severe desertification in China. Desertification area covered 68% of the whole area, and forest coverage had even dropped less than 5.1%. Ecological system, people's livelihood, and socioeconomic development are severely challenged. Acting upon the development philosophy of "lush mountains and lucid waters are invaluable assets", Kezuo Houqi starts to implement the dual mission of ecological restoration and poverty alleviation and achieved remarkable progress in meeting the climate challenge. Multi-pronged measures have been taken to control desertification. 4.1 million mu (15 mu = 1 hectare) deserted areas have been dealt with, forest land reaches 5.9 million mu, and forest coverage is now over 21%, up by 10% compared to the level of 2002. The danger of natural disasters such as drought, flood, sandstorm and salinity on agriculture has been mitigated. Along with ecological restoration and improvement, grain yield and the income of farmers and herdsmen has increased. Since 2014, farmers and herdsmen have started to work in projects related to desertification control, village forestation, street greening, and water conservation. This has boosted revenue by RMB 51.36 million, among which the income of poor farmers and herdsmen has increased by RMB 4.45 million. In order to restore the ecological environment of the grassland, grazing is strictly prohibited in some important areas, and in areas that has difficulty in naturally renewing themselves, pinus syvestris are planted. Relevant industries are developed, such as planting grass to raise livestock, tourism with ethnic features, forest and fruit planting industry, traditional Chinese medicine, and photovotaic industry. Over 1.4 million visits have been made to this region since 2017, with revenue up by RMB 1.2 billion.
Country	China

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