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# HMG SCHOLARSHIPS ALUMNI **CLIMATE CHANGE HACKATHON 2021**

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COLLECTED POLICY PROPOSALS



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# FOREWORD

**In the first week of November 2021, around twenty-five thousand delegates from nearly 200 countries came to the UK to try to achieve progress on climate change at COP26 in Glasgow.**

Global collaboration is imperative in tackling climate change. This is why I was so excited to see international alumni teams from across the UK government’s scholarship programmes working together to devise innovative climate policy proposals in the course of the hackathon.

I know that the judges were impressed by the quantity and quality of the proposals submitted by the teams. They remarked on the outstanding ideas expressed, along with the potential real-world impact of the policies.

I hope this opportunity has given our collective alumni the space to consider how they might take these ideas forward. I hope too that by sharing the 36 team’s ideas in this document we can inspire others to take action on the climate. This report has been created through 800 hours of combined environmental expertise and knowledge!

As well as encouraging global collaboration and networks, the hackathon highlighted another key objective of our Foreign, Commonwealth and Development Office scholarship programmes. This is to invest in outstanding individuals who will make a life-long positive impact in their chosen field.

Each alumnus has previously faced strong competition to be awarded a Chevening, Marshall or Commonwealth Scholarship. By participating in the hackathon, our alumni continue to demonstrate why we selected them. We hope they have enjoyed this opportunity to stretch themselves on a new project, and build connections with other talented individuals working on climate issues in their home countries. I hope that these connections will support them in their future projects and careers.

I hope that every team whose policy features here is proud of their hard work and achievement. I know that the skills and leadership on show throughout the hackathon indicate that our alumni will go on to make a fantastic contribution in their careers, and, more importantly, a positive impact on our planet.



**Naomi Rayner**  
Head of the Scholarships Unit  
Foreign, Commonwealth and  
Development Office



# INTRODUCTION

## THE HMG SCHOLARSHIPS ALUMNI CLIMATE CHANGE HACKATHON

In Autumn 2021 (27 September – 8 October), the Chevening, CSC and Marshall scholarship programmes brought 150 of their global alumni together from over 50 countries and territories and tasked them to develop innovative policy solutions to some of the most pressing global challenges our planet faces.

Policy hackathons bring together diverse groups to identify and develop policy solutions to a particular issue. In our climate-focused policy hackathon, each team developed an innovative solution to address a climate-related issue to support one of the COP26 Goals (climate finance, mitigation, adaptation, and collaboration).

With this publication and promotion of all the proposals developed during the hackathon, we want to showcase the innovative ideas that were developed during the hackathon, as well as the talent, expertise, and leadership in our scholarship networks, to a global audience.

## THE EVENTS

Our hackathon took place over just 24 hours: a short and concentrated period to allow for focused work on particularly tricky challenges. Alumni from across the three scholarships formed 36 teams by country or region and worked within their teams for a 24-hour period over the course of two weeks to develop their original policy proposals.

Proposals were presented to a panel of expert judges from academia and government who selected a winning team representing each COP26 Goal. Following a grand final, the overall winning team had the opportunity to present their proposal at an private roundtable event, coinciding with COP26, to a select audience including ministers, climate negotiators, and senior UK government figures.

## WHY DID WE ORGANISE THE HACKATHON?

We created this opportunity to bring scholarship alumni together at a national and transnational level to identify, discuss, and propose solutions to some of the most prevalent climate change issues in their home countries, regions, or globally.

Alumni were able to network and learn from experts from across the UK government's scholarship schemes and develop their own thinking and expertise, whilst promoting the contributions of HMG scholarships to the FCDO's wider commitment to tackle the climate crisis.

## IDEAS TO COMBAT CLIMATE CHANGE

We hope you enjoy reading the team's policy proposals, and that their ideas might inspire you in your own efforts to combat climate change.



# PRIZE EVENT ROUND TABLE

## HACKATHON WINNERS MOUNTAIN MATES PRESENT THEIR PROPOSAL TO SENIOR GOVERNMENT FIGURES AT HIGH-LEVEL POLICY ROUND-TABLE EVENT

After 24 hours of policy development, and two rounds of competition, the Mountain Mates team were finally rewarded for their efforts and creativity when they had the chance to present their policy proposal to a panel of senior UK government officials.

Minister Wendy Morton opened the hour-long prize-winners round-table by congratulating the team on their efforts and the proposal developed. Minister Morton praised the team for focusing their proposal on the people whose lives and livelihoods are most impacted by climate change.

She commended the team for laying out the risks to communities in the Hindu Kush Himalayas and proposing a realistic solution. Minister Morton was also impressed by the team's thinking on how those communities might be empowered and inspired to engage with the policy in tangible ways.

Team Mountain Mates then had the chance to discuss key aspects of their policy proposal with the assembled round-table panellists. Topics discussed included:

- A recognition of the inter-relatedness highlighted in the proposal between various complex systems within food security and biodiversity.
- Indigenous knowledge and practices in climate adaptation, and building resilience in the agricultural sector.
- Implementation models from other countries
- Advocacy for neglected and underutilised species in climate resilience and adaptation.
- The knowledge and expertise of team members in developing the policy proposal.

After discussing their proposal and fielding questions from the panel, team Mountain Mates had the opportunity to ask their own questions to the panel. The event finished with recommendations from our expert panel on further developing the policy proposal, as well as applying their ideas and approaches to other climate-related challenges.

It was a fantastic opportunity for the team to network virtually with senior experts, as well as honing their own policy-making and thinking skills.

## ATTENDEES

- Chair: **Beth Button**, Director of Strategic Communications, The Association of Commonwealth Universities
- **Minister Wendy Morton MP**, Minister for Europe and Americas at the Foreign, Commonwealth & Development Office (FCDO)
- **Vijay Rangarajan**, Director General, Americas and Overseas Territories, FCDO
- **Janet Rogan**, COP26 Regional Ambassador: Middle East and Africa, FCDO
- **Archie Young**, UK Lead Climate Negotiator, Cabinet Office



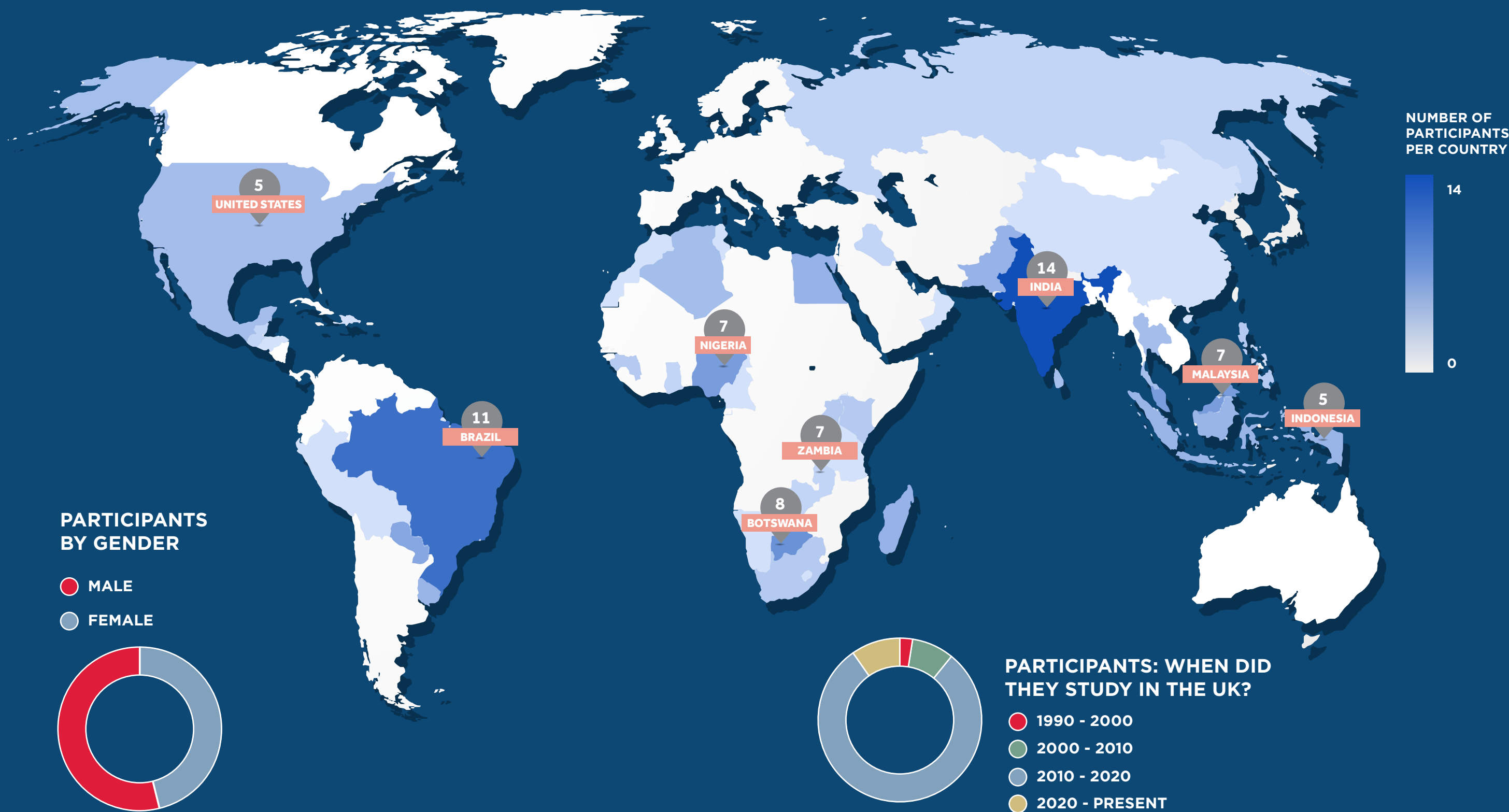
## TEAM MOUNTAIN MATES:

- **Policy proposal title:** Reintroducing neglected and underutilised species in the Hindu Kush Himalayas for climate resilience
- **Daphne Ezer**, 2012 Marshall Scholar, USA, University of Cambridge
- **Geetanjali Singh**, 2003 Commonwealth Scholar, India, University of Nottingham
- **Sibulele Ngomane**, 2019 Chevening Scholar, South Africa, SOAS
- **Hamza Rafay Butt**, 2018 Chevening Scholar, Pakistan, Cardiff University



# HACKATHON TEAMS

# A GLOBAL EVENT





# POLICY PROPOSAL SUMMARIES

## FINANCE

### AMAZON GREEN CREDIT HUB

**FINALIST**

TEAM NAME  
**ACCESSIBLE FINANCE BRAZIL**

COUNTRY/REGION  
**BRAZIL**



Based on the Sustainable Livelihoods Framework (DIFD, 1999), we are developing Amazon Green Credit Hub - a multi-stakeholder platform to facilitate the credit origination process through an environmental justice lens that tackles the climate crisis, putting people at the centre.

The Hub will connect smallholders and vulnerable communities, who usually cannot access traditional financial services, to banks, development finance institutions (DFIs) and funds that are willing to promote green growth and a just transition in the Amazon region. These services also lack access to a track record and local knowledge that is key for providing impactful loans and investments.

The proposal relies on developing a certification methodology to become a trusted standard for funders and banks to find the most vulnerable yet meaningful beneficiaries. Firstly, the SustainableTag will map the profile of smallholders and cooperatives based on their potential to reduce greenhouse gas emissions, keep forests standing, and produce social and cultural co-benefits at the community level.

Such factors should be taken into consideration with the same level of importance often unilaterally given to the probability of default.

“

**The Hub will connect smallholders and vulnerable communities, who usually cannot access traditional financial services.**

”

Moreover, other KPIs will be developed by local associations through inclusive focal groups.

One of the Hub’s main differentials relies on tackling the default risk with a bottom-up approach. Our powerful and diverse network of partners, the “Green Agents” (local NGOs, technical assistance providers and community leaders), will provide local knowledge and support to these communities to access the market directly. They will also promote the creation of new cooperatives and associations so the solution can de-risk, scale and empower.

### AFRICA EMISSIONS TRADING SCHEME (AETS)

**HIGHLY COMMENDED**

TEAM NAME  
**DUNIA BORA**

COUNTRY/REGION  
**SUB-SAHARAN AFRICA**

The AETS is to be a cap-and-trade system covering greenhouse gas (GHG) emissions open to all countries in Africa. The goal is to reduce GHG emission levels and utilise the revenue in a number of Africa-wide emissions reduction projects and initiatives.

The AETS will apply to GHG emissions from the power, building, construction, transport and industry sectors to cover approximately 80% of emissions. For the inaugural year, calculated discounts will be

given to sectors, depending on their emissions levels, for transitional assistance, trade exposure and to prevent carbon leakage. Credits shall then transition to auctions after. Additional discounts shall be offered to companies with the requirement that the discount value must be used to benefit ratepayers and achieve GHG emissions reductions. This shall be subject to annual review. Annually, the allowance for AETS will be reduced in order to meet net zero emissions by 2050. The AETS will be managed primarily by the African Development Bank (ADB), selling emissions credits to scheme members.

The International Energy Agency reported in 2018 that Africa emitted a total of 1.245Mt of carbon dioxide. Placing a price on carbon between \$5 and \$25 per tonne of CO2 shall produce a revenue of \$6 to \$32 Billion respectively.

ADB will partner with the United Nations-run carbon-offset scheme (Clean Development Mechanism) to generate emissions credits, and therefore income, from carbon sink initiatives in African countries.

“

**To achieve our climate goals, every company, every financial firm, every bank, insurer and investor will need to change.**

”

Revenue shall be utilised for:

- Transitional support to industries
- Climate investments
- Research and development
- Agriculture, forestation and ocean

### INTEGRATED MONITORING SYSTEM FOR RENEWABLE ENERGY FINANCING

TEAM NAME  
**GREENAVIGATE**

COUNTRY/REGION  
**INDONESIA**



The Government of Indonesia (GoI) has pledged to curb emission by 29% compared with business as usual, or 41% with international partnership, including an ambitious renewable energy development target.

However, despite strong policy actions in renewable financing, the government programmes are slowed by a lack of a project pipeline, suitable financing instruments and funds, and also limited access to green finance platforms.

Our team proposes an integrated monitoring system for GoI programmes to accelerate finance to renewable energy development. The GoI programmes are the Indonesia Environment Fund, SDG Indonesia One, the Geothermal Resource Risk Mitigation (GREM) Programme, Global Environmental Facility, Sovereign Green Sukuk, and Green Bond. The system will track the realised finance flow to renewable projects and integrate them under one platform.

The responsibility will fall under the Nationally Designated Authority, the Fiscal Policy Agency at the Ministry of Finance. It will involve the formation of a technical team, consisting of members from the different programmes and headed by BKF. It will work across programmes to collate and analyse the data from different stakeholders.

One of the expected outputs is an online dashboard highlighting the climate finance flow, the regulatory ecosystem, and the environmental and socio-economic impacts of the investments.

The system aims to, firstly, increase transparency of renewable ecosystem/projects and climate finance flows in Indonesia to cater for the investor’s return appetite/ high-risk aversion. Secondly, the system will identify the main trends, sectors, and a project pipeline of investment opportunities. These will be the starting points in resolving the lack of information on renewable energy investment projects.





FOCUSED WORLD CLIMATE FUND

TEAM NAME  
TRILLIONS4CA

COUNTRY/REGION  
INDIA



The policy enables mobilising trillions in private and public sector finance, through a custom-designed, value-added financing architecture called Focused World Climate Fund.

The fund is to be controlled by a group of international financial institutions (IFIs), with execution and end-use monitoring through various special purpose vehicles under the fund. The policy envisages one of the largest structured collaborations between governments, businesses, civil society and IFIs. The collaborators are to work together to secure global net-zero by financing, promoting, facilitating, and building resilient infrastructure and agriculture across chosen project categories.

These will include:

- protecting and restoring ecosystems
- speeding up the switch to electric vehicles
- encouraging use of renewables

The policy proposes a people-centric, participative approach through a structured financing option for specific, high-impact climate action projects. The approach would have all the four essential characteristics of:

- a major global positive impact in climate change mitigation
- execution by beneficiaries across the globe using climate-friendly tools and processes
- generating a positive ROI to the beneficiaries
- potential for localisation of resources and benefits

Two of the major outcomes of such projects are the enhancement of the quality of life of all stakeholders and the achievement of global climate goals. The project categories are pre-determined at the inception of the fund, so, the collaborators are clear about their objectives and means.

The highlight of the fund is to ensure participation of millions of common people globally. The fund uses finance and quality livelihoods as levers so that climate action becomes a people’s mass movement across the globe.

“  
The highlight of the fund is to ensure participation of millions of common people globally.  
”

COLLABORATION

NATIONAL PLAN FOR PEOPLE-CENTRED CLEAN ELECTRICITY TRANSITION POLICY, 2021 (NPPCETP)

FINALIST

TEAM NAME  
SUNRISE

COUNTRY/REGION  
NIGERIA



The energy sector accounts for 60% of the total greenhouse gas (GHG) emissions despite 48% of Nigeria’s population lacking access to electricity (especially the most vulnerable in the society). With Nigeria’s population expected to double by 2050, and its extreme vulnerability to climate change, energy demand will only increase

exponentially with an associated increase in emissions unless more innovative policies are implemented.

An assessment of key policies on several criteria such as affordability and climate vulnerability (amongst others) showed that these policies fail to address pro-poor and vulnerable populations and lack sufficient operational inclusiveness to deliver net zero for these target audiences.

Hence we have designed the national plan on people-centred clean electricity transitions policy (NPPCETP) to bridge these identified policy gaps. The policy focuses on the inclusiveness of community-led development that prioritises vulnerable and marginalised people for sustainable electricity access in unserved communities in rural Nigerian areas.

It will consider local green energy competitive advantage, ensure collaboration between multiple stakeholders’ communities, and accelerate other Sustainable Development Goals. Its objectives are built around the proposition that energy access must be all-inclusive, offer social protection to poor and vulnerable populations, and allow communities to play an increased role in reducing their climate vulnerabilities.

The policy targets are:

- The development of 1,000 community projects with stipulated percentages of solar, wind, hydro, and other renewables.
- Afforestation of 5,000 trees to offset embodied carbon during the construction of projects.
- NGN600m direct electricity subsidies for pro-poor households by 2030 through social protection schemes.

CLIMEDUCATE: LEVERAGING MASS MEDIA TO INCREASE CLIMATE AWARENESS IN SUB-SAHARAN AFRICA

HIGHLY COMMENDED

TEAM NAME  
TEAM CLIMATHENICS

COUNTRY/REGION  
SUB-SAHARAN AFRICA

Sub-Saharan Africa (SSA) is one of the most vulnerable regions to climate change. This vulnerability is exacerbated by a lack of awareness

among other key factors such as a lack of finance, inadequate expertise, and weak institutional frameworks to develop adaptive measures. Improving region-wide awareness of climate change will serve as a solid foundation for other climate policy measures to thrive.

An approach utilising the mass media is promising. SSA’s number of TV households is projected to reach almost 75 million by the end of 2021, indicating an increase of 19.7 million against 2015 figures. This presents SSA as one of the world’s major consumers of media. Television and radio are widely considered effective to the development of perceptions and influence of lifestyle. This is based on the psychological effects of repetition, which aids memory. It is proposed that short “top-of-the-mind content” (audio and video) be deployed at high frequency but

non-intrusive ways through mass media. Effectiveness can be achieved when the nexus between environmental sustainability and socio-economic development, including content on ways to take individual action, are communicated in this manner.

Among the expected outcomes of this strategy are changes in lifestyle to more sustainable ones and a charged willpower among policymakers to translate climate ambition to action. It is expected that this strategy would result in a resilient SSA region in five years, post-implementation. This proposal advocates a partnership with ministries of environment in SSA and private media organisations to drive ownership.



**GREEN EDUCATION  
EMPOWERMENT  
NETWORKS  
(GREEN) TO  
TACKLE THE  
CLIMATE CHANGE  
EDUCATION GAP IN  
LATIN AMERICA**

TEAM NAME  
**EN: GREEN EDUCATION  
EMPOWERMENT  
NETWORKS LATAM  
(GREEN)**

COUNTRY/REGION  
**LATIN AMERICA**



Climate change is the most pressing global challenge humanity faces. Latin America (LATAM) and the Caribbean are amongst the most vulnerable regions. Furthermore, climate change impacts

disproportionately marginalised and remote communities, where indigenous populations live. Climate change education constitutes an effective strategy for increasing resilience, but only four LATAM countries include climate education in their Nationally Determined Contributions. Therefore, a minority of schools in LATAM have included climate change education in their educational plans. Educational actors have identified the lack of updated and contextualized tools and materials as obstacles for effective climate change education, consequently increasing the climate vulnerability of local communities.

This proposal supports the creation of a multi-stakeholder, collaborative and knowledge-sharing platform that will connect educational stakeholders, public institutions, civil society, and the private sector to achieve three main goals: Connect, share and take action!

It will serve as a collaborative hub for educational stakeholders

seeking innovative strategies to implement climate change education. Educational stakeholders could use the platform to reach other peers experiencing similar challenges and then ask for advice, offer support or act together. Governments, universities or research institutions can also use the platform to connect with educational stakeholders to implement environmental service-learning projects.

It aims at facilitating a free, open, and informal space for sharing educational tools and resources to improve the conditions of educational centres, particularly those in remote and indigenous communities, keeping a privileged space for those incorporating forms of ancestral/traditional knowledge.

This platform will allocate a space to request assistance, publish volunteering and teacher exchange opportunities, and lead joint projects and transformative actions.

**BETTER  
RELATIONS FOR  
A STRONGER  
COMMUNITY  
IN THE DRY  
CORRIDOR  
OF CENTRAL  
AMERICA**

TEAM NAME  
**CLIMAT-GRATION TEAM**

COUNTRY/REGION  
**NORTH AND  
CENTRAL AMERICA**

Central America is exposed to natural events that have affected it. According to GermanWatch's Global Climate Risk Index, these countries rank highest in terms of climate change risk, despite being responsible for only 0.5% of global emissions.

The devastating effects of hurricanes and droughts have deepened poverty conditions, triggering caravans of thousands of migrants who decide to leave their countries to the United States. For example, in the "dry corridor", an area that extends throughout Central America, droughts have increased considerably, affecting communities where 80% of the population live under the poverty line and 25% suffer from food insecurity.

Despite the intersectoral actions to address the problem, people still consider migrating to the USA as their only option, making evident the lack of appropriation and attachment to the development projects and their territory. That's why we propose a programme to generate a local sense of communal belonging focused on developing and strengthening the feeling of community based on human relationships and collective purpose using the "design thinking" methodology.

**“ It is estimated that Central America is responsible for 0.5% of global emissions, but is one of the most affected regions by climate change. ”**

Facilitators will share the methodology with the communities, enabling them to find their own sense of collectivity and purpose by harnessing their sense of community through workshops designed to understand the vision of each community, build capacities and untap the potential of the relationships of each locality. With this, each community can design their "bottom-up" projects based on their needs and objectives, with international cooperation support. The aim is to discover their collective mission for communal development.

**MOBILISING FOR A  
FAIR, LOW-CARBON,  
COMPETITIVE  
ECONOMY THROUGH  
LOCAL WASTE  
ACTION PLANNING**

TEAM NAME  
**THAILAND TEAM**

COUNTRY/REGION  
**THAILAND**



Founded on the principle of creating a fair, low-carbon, and competitive economy, our solutions will enable local people and planning authorities to cooperate, build climate resilience, and mobilise toward sustainable and inclusive outcomes. We propose a strategic approach to help local communities and the planning

authorities transition from a linear to a circular economy, with waste management as our entry point.

At the heart of climate resilience building is the need to address the disconnection of local aspiration and national climate planning. We hear the story repeatedly that we can never define how to best adapt to climate impacts at a high-level meeting. Climate action has and will always be realised successfully at the local scale by the communities themselves being able to participate effectively.

Therefore, our strategic approach will address the systemic challenges in three ways.

- First, we will propose a 'national hackathon' for local communities to propose their ways to manage waste sustainably - the Community Action Plan on Waste (CAPOW). The hackathon will be used strategically as a platform to

help local communities organise and strengthen their capacity to engage with the local and national planning authority.

- This leads to the second point, in which we will engage the private sector to finance local ingenuities as climate investment.
- Finally, we will engage with planning authorities to rearrange their management and budget structure to enable the selected communities to implement the CAPOW, and therefore forge a pathway to change national laws from the bottom-up.

**GAEA'S COL-LOVE  
PEACE VICTORS**

TEAM NAME  
**GAEA'S PEACE VICTORS**

COUNTRY/REGION  
**ASIA**

**“ We aim to foster transnational collaboration... to address the challenges in the global fight against climate change. ”**

The policy proposal of Gaea's Peace Victors, from the Philippines and Oman, pertains to the institutionalisation of transnational green education on climate change. The aim is for all states to work together towards a vision to foster a resilient and sustainable transnational green education among schools, universities, government institutions, and business enterprises. The involvement of these key actors would create inclusive and holistic transformational mass collaborative societies.

The heart of our proposal is centred on the love for Gaea as Mother Earth. We would promote a proactive approach of enabling mass collaborative societies through "quadmedia".

This means using social media platforms, livestreaming, radio programmes and print media to cover sustainability awareness and climate change in the urban area and in far-flung areas of the rural countryside.



This includes the indigenous communities, differently-abled, and elderly communities who are vulnerable to the adverse effects of climate change. In this policy proposal, the members of Gaea's Peace Victors aimed to work with all stakeholders in society at the local level. We aim to foster transnational collaboration in the international system to address the challenges in the global fight against climate change.



# ADAPTATION



## REINTRODUCING NEGLECTED AND UNDERUTILISED SPECIES IN THE HINDU KUSH HIMALAYAS FOR CLIMATE RESILIENCE

WINNER

TEAM NAME  
MOUNTAIN MATES

COUNTRY/REGION  
FOOD SECURITY



Our policy reintroduces indigenous food crops and livestock which are currently neglected and underutilized species (NUSs) in the Hindu Kush Himalaya (HKH) region. The policy objective is to enhance the quantity and quality of agriculture in the HKH region, enabling it to be resilient to climate change.

The HKH region is home to 240 million people and the majority depend on local agriculture as a source of food and livelihood.

Climate change threatens agricultural systems in the HKH region through changed glacier behaviour, floods, droughts, interrupted water supplies and crop-to-pest distribution.

Compared to cereal crops and mixed livestock breeds, NUSs can withstand harsh and unseasonable weather. Moreover, NUSs are nutritionally dense, suitable for prolonged storage and commercially viable. To ensure the efficiency and effectiveness of NUSs re-introduction, our policy has three pillars:

- NUS credit scheme
- NUS capacity and awareness training programme
- Traditionally Himalayan campaign

“

**Climate change threatens agricultural systems in the region through changed glacier behaviour, floods, droughts, interrupted water supplies and crop-to-pest distribution.**

”

The NUS credit scheme makes the cultivation of NUS species affordable for farmers by providing low interest rate loans, purchase assistance for NUSs climate-smart equipment, and price matching for harvested NUSs. The NUS capacity and awareness training programme innovates these agricultural practices by educating farmers on the advantages of NUSs and climate-smart equipment.

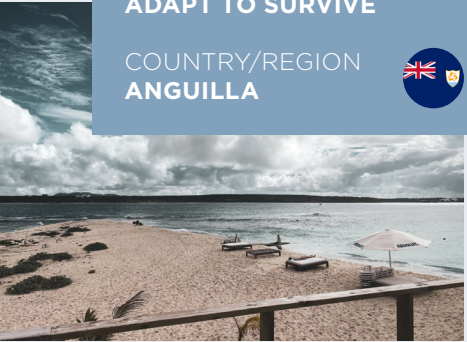
This program will also facilitate peer-to-peer sharing of farming best practices. Finally, the “Traditionally Himalayan” campaign guarantees enhanced marketability by creating geographic indication tags marked food with brand logo for climate resilient HKH NUSs.

## SUSTAINABLE CLIMATE FINANCING THROUGH IMPROVED ENVIRONMENTAL RESPONSIBILITY

HIGHLY COMMENDED

TEAM NAME  
ADAPT TO SURVIVE

COUNTRY/REGION  
ANGUILLA



This proposal seeks to develop a sustainable climate trust fund for Anguilla to improve the implementation of proactive adaptation measures to climate change.

It will be designed to divert funds from existing licensing and application schemes that have an environmental component and other relevant avenues to establish and sustain the trust fund.

Contributions may be financial or non-financial (time, project materials and equipment, volunteers and consultancy).

All contributions, regardless of the mode, will be subjected to the monitoring and evaluation mechanisms of the trust fund.

Financing for the fund will be derived from the following activities:

1. A percentage of payments from foreign investors. Any person or company applying to buy land or applying to develop in Anguilla will be diverted to the trust fund.
2. Businesses with significant environmental footprints such as petroleum companies and marine vessel businesses will be required to pay an annual fee, a percentage of which will be diverted to the trust fund.
3. Resorts, hotels and villas which charge an environmental tax will pay a percentage of this tax to the trust fund.
4. Lawful philanthropists and other donors who wish to contribute to the fund. There will be transparency mechanisms in place to avoid donations and contributions going into Government's consolidated fund.
5. Payments from fines associated with environmental degradation e.g. littering and sand mining to be sent directly to the trust fund.

## TEKOHA: “THE PLACE WHERE WE ARE WHAT WE ARE”

HIGHLY COMMENDED

TEAM NAME  
JUST INVOLVEMENT OF INDIGENOUS PEOPLE IN DECISION MAKING (JIIPD)

COUNTRY/REGION  
NORTH, CENTRAL AND SOUTH AMERICA

The challenge: Indigenous women and children are the most vulnerable to climate change. At the same time, they are guardians of ancestral knowledge and protectors of nature, as recognized in the Paris Agreement and through 1.CP.21 and 2.CP.24. Despite the above, indigenous women and youth are not sufficiently included in adaptation planning. Adaptation policies often turn out to be a threat to the security of these people and their livelihoods.

Our solution: 80% of the earth's biodiversity is protected by indigenous people. To protect this and counteract existing damage, we propose a communication platform that supports adaptation under the lens of socio-environmental justice.

Implementation: We propose creating evidence through the use of multiple methods of data collection, using existing communication channels and the creation of new channels such as “m-government”. Our platform will aggregate indigenous voices in one place, to quickly visualise interconnections that may exist between biomes across geopolitical boundaries using GIS, story-maps, data studio, and AI language analysis.

Impact: We will use this evidence to increase the effectiveness and legitimacy of adaptive actions. It will initially include more than 7,000 indigenous people, particularly the voices of women and youth, as we will use 2G networks and radio programmes to cover more territory, and provide need-sensitive and native language communication options.

“

**We are told we are the guardian of nature, but our voices are not taken into account for climate action and environmental justice.**

”

- INDIGENOUS PARAGUAYAN LEADER

We will ensure transparency through an open data platform and use of monitoring and impact indicators. Climate adaptations are bound to be ineffective if they ignore indigenous women and youth, and our platform creates a meaningful way to empower these crucial voices.



PEOPLE2PEOPLE

HIGHLY COMMENDED

TEAM NAME  
PEOPLE2PEOPLE

COUNTRY/REGION  
DOMINICAN  
REPUBLIC



People2People (P2P) is a financing policy programme that aims to create a hub for climate change adaptation. It does this through crowd-sourcing and crowd-funding mechanisms to enhance resource mobilisation and respond to the climate change challenges faced by small and medium-sized coffee entrepreneurs. The policy proposal is developed for the Enriquillo region in the Dominican Republic, one of the first coffee production

areas in the country, and a region vulnerable to climate change. This region is especially vulnerable due to the low Human Development Index rating in the country, high teenage pregnancy rates, and ranking in the Climate Change Vulnerability Index.

The P2P connects small and medium-sized coffee entrepreneurs with funding and expertise to adapt the farms to the climate shocks. It will be reached through a blended fund to replenish insufficient resources, a climate change adaptation (CCA) package complemented by a platform to exchange knowledge. P2P will be funded by the Dominican diaspora (including in the US, Spain and from the Chevening community), the private sector, non-governmental organisations, cooperation and environmental organisations, and the public sector (national and local municipality budget).

The CCA package consists of two main components:

- Firstly, a technological upgrade of farms, including more advanced equipment, machinery, fertilizers, irrigation system, soil testing.
- Secondly, basic training for climate change adaptation, sustainable production, and digital technologies to access more opportunities and exposure.
- In addition, people will access the hub ecosystem where people can share experiences, feedback on implemented measures (coffee producers and outside experts). They can also deepen knowledge by connecting with specialists worldwide, or by partnering with new suppliers or markets, for example.

INTERACTIVE  
SPATIAL CLIMATE  
RISK MAPPING FOR  
ADAPTATION

HIGHLY COMMENDED

TEAM NAME  
TEAM ISAGO

COUNTRY/REGION  
BOTSWANA



Climate risk management, characterisation, assessment and the presentation of such data is an integral part of successful adaptation planning.

Therefore, the use of interactive spatial climate risk data tools in addressing climate impacts that exacerbate vulnerabilities, loss of livelihoods and habitats is essential. The current assessment of risk and planning for adaptation in Botswana follows a business-as-usual top-down process that runs the risk of perpetuating maladaptation. Those who are planning for adaptation do not have a practical outlook on what forms vulnerabilities and risk might take. The absence of a policy to address

this data gap leaves adaptation to the imagination of those in power. As part of the implementation of the new Botswana Policy on Climate Change, district councils should be supported to develop interactive spatial climate risk maps. These district maps will allow communities and adaptation officials to visualise climate risk and vulnerabilities.

This tool will show low-risk and high-risk zones, simulate the number of people in vulnerable situations, vulnerable livelihoods and habitats. This tool will merge the strengths of traditional and scientific knowledge. It allows for the development of targeted and contextual adaptation interventions instead of the generalisations that usually miss the mark.

It is an important tool for adaptation decision-making that will assist community leaders, village development committees, district councils and the political leadership participate meaningfully in adaptation planning. Without climate risk data, adaptation planning in Botswana and other developing countries remains business as usual.



REMEMBERING DR OBAKENG  
SETHAMO OF TEAM ISAGO,  
DECEMBER 2021

The Chevening network send our condolences to family and friends of Dr Obakeng Sethamo, who died on 10 December.

Dr Sethamo was a passionate climate change researcher with a background providing strategic leadership in development, governance, climate change adaptation and disaster risk reduction in Botswana.

Obakeng Sethamo became part of the Chevening family in 2015 when he studied an MSc in Climate Change and Development at the University of Sussex with a Chevening Scholarship. Dr Sethamo will be fondly remembered in his role as chair of the Chevening Alumni Association of Botswana. He was an influential alumnus who contributed fully to alumni activities in both Botswana and the UK.

Demonstrating his commitment, he had recently led Team Isago in this hackathon, and the team were highly commended by the judges for their policy proposal.

THE GREEN-BLUE  
INITIATIVE: COASTAL  
ADAPTATION - A  
SMALL ISLAND  
DEVELOPING STATES  
(SIDS) PERSPECTIVE

TEAM NAME  
CARIBBEAN CLIMATE  
CHAMPIONS (3CS)

COUNTRY/REGION  
CARIBBEAN

This proposal calls for coastal adaptation measures uniquely designed for the Caribbean context using resources based intra-regionally, as well as pilot projects in Barbados. Coastal adaptation is a heightened challenge for small

island developing states as adaptive capacity and development status are interrelated. With the existential threat of climate change, coastal development and infrastructure will face increased impacts.

A lack of strategic planning coupled with weak institutional capacities impedes a country's ability to effectively adapt. Despite strong political resolve, the absence of financial support and robust institutional capacity are directly correlated to the region's high vulnerability.

Mainstreaming national and regional adaptation is imperative. It breaks the perpetual low-state capacity and economic debt burdens that historically characterised recovery from climatic events and disasters.

“

Caribbean SIDS are particularly vulnerable to coastal hazards due to their fragile ecosystems and environments. By the year 2100, these areas are more likely to be rendered unviable.

”

BLOCKCHAIN  
CROP INSURANCE

TEAM NAME  
CLIMATE TEAM NORTH  
AFRICA

COUNTRY/REGION  
NORTH AFRICA

In North Africa and particularly in Tunisia and Egypt, a small percentage of smallholder farmers have access to agricultural insurance coverage. At the same time, crops are increasingly vulnerable to climate change and smallholders are not adapting to the effects of floods and droughts.

Insurance of crops can help farmers become more resilient to climate change impacts. Moreover, according to the World Bank, the removal of risk through insurance can increase smallholder investment and income by 30 per cent. Unfortunately, the traditional insurances available in the region are expensive and not always accessible. Most importantly, pay-outs are not transparent, therefore trust between farmers and insurers is a major issue.

As blockchain technology is immutable and characterized by a decentralised governance system, it offers advantages to crop insurances. A blockchain-based crop insurance is a different type of insurance that is affordable and accessible to smallholder farmers at scale. This will be a digital platform available on a mobile phone with insurance policies in the form of smart contracts on a blockchain. The policies are indexed to local weather using data from weather stations and satellites. Pay-outs will be automatically triggered when the rainfall index falls above or below a pre-specified threshold. Thus, pay-outs are fair, transparent, and timely.

This instrument can make crop insurances affordable by reducing transaction costs and claim cycles. Above all, it enhances transparency and develops trust. As a result, blockchain crop insurance can help stabilise income for smallholder farmers, thereby improving their assets and livelihoods.







## INTEGRATING SEA LEVEL RISE ADAPTATION INTO COASTAL PLANNING POLICIES

TEAM NAME  
**INDIAN OCEAN SDG14 ACTION GROUP**

COUNTRY/REGION  
**MAURITIUS**



“**Small Island Developing States will be impacted by high-tide flooding, extreme weather events and habitat loss.**

”

Sea level rise is a pressing threat to coastal communities in Small Island Developing States (SIDS). The Intergovernmental Panel on Climate Change (IPCC, 2019) projects that SIDS will be impacted by high-tide flooding, extreme weather events, habitat loss, shoreline erosion, increased salinity and loss of beach area.

Our policy’s main objectives are:

1. Creating public and political awareness on the impact of sea-level rise.
2. Empowering and training citizens to develop adaptive capacity to sea-level rise through tailored education programmes.
3. Increasing collaborative actions with the government, local and international non-governmental organisations (NGOs) to support adaptation measures initiated at community level.
4. Preserving the inherent sustainable habits of local people.
5. Implementing planned socio-economic development projects along coastal areas that are in line with the Sustainable Development Goals.

The policy shall be adapted to and inspired by the local context and needs of the country as a small island state. To ensure effective implementation, we shall:

1. Work closely with the umbrella NGO regrouping the hundreds of village committees in Rodrigues, i.e., the Rodrigues Council of Social Services (RCSS).
2. Collaborate with local artists to produce original informative media to be broadcast on different social platforms.
3. Set up ‘Action for Ocean School’ in primary, secondary and technical and vocational education and training (TVET) schools to instil a culture of protection and conservation in youths.
4. Secure finance from donor/ funding organisations to support activities and a projected action plan.

Indicators will be used to measure the policy’s effectiveness and identify the impacts and effects of the policy in defined time periods.

## THE USE OF CLEAN AND RENEWABLE ENERGY IN PARAGUAY

TEAM NAME  
**PARAGUAYAN TEAM**

COUNTRY/REGION  
**PARAGUAY**



Paraguay is distinguished for 99.5% of its renewable electricity generation based on hydropower. However, biomass and fuel sources account for around 83% of the final energy consumption and, up to 75.2% of the total hydropower generation is exported to neighbouring countries. This policy proposes innovative solutions to the government by promoting the electromobility transition and diversification of renewable energy.

The transport sector is responsible for 99.3% of the energy sector’s total CO2 emissions and the National Development Plan expects there to be 137,013 electric vehicles by 2030. Our policy proposes an attractive financial market for international investment to the public transport sector and electric transport fleet. This includes charging stations and a differential energy tariff for charging purposes with a five-year grace period. By meeting the target and replacing conventional buses, the impact would be a 20% decrease in CO2 emissions.

Industry in Paraguay is also heavily dependent on biomass. Considering the potential of solar power in Paraguay, the policy targets the industry sector by implementing flexible credits for installation of solar energy generation and a reward consisting of tax reductions for low CO2 emitting industries. In addition, the policy includes the possibility of selling the energy surplus to the grid in a future distributed generation scheme.

Finally, there is the potential production of green hydrogen, with reduced-cost production making the hydrogen more profitable. As an initial stage, the policy incentivises the installation of electrolyser manufacturers by providing them with an import tax exemption and adding a 1% tax for international exports based on the current “maquila” scheme.

## COMMUNITY-LED AGROECOLOGY FOR ADAPTATION & DEVELOPMENT

TEAM NAME  
**TEAM MADAGASCAR**

COUNTRY/REGION  
**MADAGASCAR**



Climate change has aggravated the famine situation in the Anosy and Androy regions due to irregular rainfall and soil degradation, while 90% of the population depends on agriculture for its survival.

In addition, there are a lack of adequate solutions proposed, and limited synergy between public institutions and different development organisations operating in the south. Community-led agroecology is proven to be the most sustainable solution for the Anosy and Androy regions, designed with a bottom-up approach that should provide a common vision to align the different stakeholders.

Agroecology is a way to rethink food systems so that they can contribute significantly to climate mitigation and adaptation (CGIAR [Consortium of International Agricultural Research Centers], 2021). Indeed, by increasing high production and livestock diversity, resilience can be created by dispersing risks and improving the buffering capacity of water

and nutrients in the system (the International Fund for Agriculture Development, 2019).

Furthermore, in the face of water scarcity, rainwater harvesting technologies, traditional irrigation systems and soil and water conservation techniques, as well as crop diversity, reduce the risk of crop failure and improve food security. The also increase the resilience of farmers to other climate-related shocks in arid and semi-arid areas.

Thus, agroecology has multiple benefits, namely:

- the empowerment of rural families, especially women, young farmers, and indigenous people.
- the engagement of local knowledge through participatory and educational approaches leading to effective adaptation of technologies to local contexts and improved adaptation and mitigation.



## ADAPTING TO SEA LEVEL RISE: NATURE-BASED SOLUTIONS FOR SOUTH AND SOUTHEAST ASIA

TEAM NAME  
SOUTH ASIAN  
ADAPTATION LEAGUE

COUNTRY/REGION  
SOUTH ASIA

11% of population of South and Southeast Asia (SSEA) lives along coastlines and they are one of the most vulnerable communities to sea-level rise. In SSEA, sea-level rise is predicted to displace millions of people living in low-lying areas while saltwater intrusion will result in the loss of arable land.

Currently 44% of the global coastal mangroves which support marine

biodiversity and protect lowlands against flooding are found in SSEA. Our policy proposal focuses on mainstreaming mangrove restoration as a means of adapting to sea-level rise. This nature-based solution approach focuses on community-linked adaptation by exploring the nexus between nature and people.

It proposes engagement of communities by empowering them with the skills to conserve, restore, and sustainably utilise coastal mangroves. In addition to improving climate resilience in this region (Sustainable Development Goal 13), our policy action will lead to multiple co-benefits such as improving conservation efforts, diversifying local livelihoods, and enhancing carbon sequestration (blue-carbon ecosystems), which support SDGs 1, 2, 8, 14 and 15.

The knowledge and resources (including traditional knowledge of indigenous communities) to empower local communities will be provided through the establishment of coastal village-based community groups, and supported by government and non-governmental

organisations at regional and national levels.

It's expected that measurable nature-based solution targets will be included in national plans, along with mandatory progress reporting towards achieving these targets. Existing regional cooperation networks can be used (for example the South Asian Association for Regional Cooperation, or the Association of Southeast Asian Nations) to link all countries in SSEA. This will enable a knowledge-exchange platform on the use of mangrove restoration in adapting to sea-level rise (SDG 17).

“  
**11% of the South and South-East Asian population live along their coastlines, which are vulnerable to sea level rise. Millions of people will be displaced.**  
”

## DRIZZLE: DRIVING CLIMATE CHANGE ADAPTATION AMONG FARMERS VIA AN INVESTMENT HOLDING VEHICLE

TEAM NAME  
AGRO-CLIMATE SHIELD  
AFRICA (ACSA)

COUNTRY/REGION  
SUB-SAHARAN AFRICA

As the world rapidly draws near to 2030, policymakers are tasked with ensuring that the SDG targets for poverty and hunger are met. However, this is intrinsically tied to climate action. Unfortunately,

recurrent and intensifying droughts have lowered productivity in agriculture, consequently undermining food security and economic development in many African countries. Nigeria, for instance, loses about USD5 billion annually to desertification and drought (World Bank, 2005).

Some countries use early warning systems to inform farmers about future droughts and other climate hazards. Some adaptive actions taken include: growing drought resistant crop varieties and breeds of livestock, water harvesting and irrigation, mulching, and terracing, among others.

Sustainability of adaptation measures is often hampered by inadequate finance, poor organisation and coordination among government agencies and little to no commercialisation of climate change adaptation information and action.

Climate change-related projects are usually financed by donor agencies and locally administered by government departments whose priorities are mostly non-commercial. To drive investment in drought and climate change adaptation for farmers, we propose African governments enact into policy the creation of Climate Change Adaptation Investments Holding Vehicles (CAIV).

CAIVs will be responsible for identifying and planning for investment opportunities based on drought events prognostics from early warning systems. CAIVs will also raise capital from various sources to operationalise special purpose vehicles (SPVs) mandated to manage businesses based on CAIVs' adaptation plans. The potential impact of this proposal includes alleviation of hunger among over 10 million farmers and increased food security.

## RISING DEFORESTATION AND BUSH FIRES IN FOREST DEPENDENT COMMUNITIES IN SUB-SAHARAN AFRICA, UNDER SEVERE CLIMATE CONDITIONS

TEAM NAME  
AGROFORESTRY AND  
TREE PLANTING

COUNTRY/REGION  
WEST AFRICA

The greatest problem in Sub-Saharan Africa (SSA) is rising deforestation and bush fires with northern Sub-Saharan Africa alone contributing 25% to global carbon emissions. Over 65% of Sub-Saharan Africa's population is rural and made up of smallholder farmers with 23% of GDP coming from agriculture. This leads to continuous agricultural expansion, increasing deforestation and bush fires.

A lack of climate-smart agricultural methods, inadequate land-use planning and governance, a lack of tree-planting culture, and a lack of training, increases deforestation

and bush fires. This causes serious negative impacts on global food security, ecosystems, rural livelihoods, and climate variability.

For example, Cameroon is the second largest timber producer in Sub-Saharan Africa with high abusive land-use and has lost over 92% of its coastal forest. Ghana is losing its rainforest faster than any other country in the world with over 60% of forest land lost to cacao plantations. Ghana has lost 136kha of natural forest, equivalent to 82.2 Mt of CO2 emissions.

A proposed solution is an integrated landscape approach composed of agroforestry and tree planting. It is crafted and implemented through a democratic process of consensual integrated land-use agroforestry and tree planting systems. It is interactive, supports local governance and involves all stakeholders to jointly identify community problems. They will then craft and implement a project to improve agricultural production and close gaps in the multi-function use of forest landscapes and climate adaptability for sustainable development. The project is established according to local contexts. The project will use affordable materials and local expertise with recommended strategies. It is envisaged to impact 300 million people.



“  
**Ghana is losing its rainforest faster than any other country in the world with over 60% of its forest land lost to cacao plantations.**  
”

## BUILDING CLIMATE RESILIENCE THROUGH SOCIAL PROTECTION

TEAM NAME  
RESILIENT PLANET

COUNTRY/REGION  
MIXED TEAM

The socio-economic crisis created by the Covid-19 pandemic imposes a new layer of climate risks on the planet. Social protections, if rebalanced, can prepare 47% of the global population to adapt to climate change.

The proposal is built on the Mahatma Gandhi national rural

employment guarantee scheme (MGNREGS) in India which employs the rural households in creating rural infrastructures. It is proposed that MGNREGS will be implemented in line with India's climate change agenda to build the climate resilience of rural communities and rural infrastructures.

The outcomes of MGNREGS will be linked to adaption goals and the implementing agencies will be accountable to this. As a result, 150 million people covered under MGNREGS will move beyond their vulnerable thresholds and adapt to climate shocks by the year 2025.

About 4 million climate resilient infrastructures will be created which will increase the green cover and irrigation potential contributing to the bigger goals in the long run as well. The strengths in the

proposal are as follows:

- MGNREGS is an Act of Parliament in India
- A robust institutional set up is already there
- Approximately US\$10 billion in finance is allocated annually along with strong political will in the government

The proposal is easily scalable because globally countries spend over US\$2 trillion on social protection every year. Social protection has also gained momentum in recent years to achieve the SDGs. International agencies like the UK Foreign, Commonwealth and Development Office, and the World Bank, have already spoken on the need to integrate climate risk management in social protection.



# MITIGATION

## INCENTIVES FOR MITIGATING AGRICULTURAL GREENHOUSE GAS EMISSIONS WITH DATA (IMAGED)

**FINALIST**

TEAM NAME  
**IMAGED (INCENTIVES FOR MITIGATING AGRICULTURAL GREENHOUSE GAS EMISSIONS WITH DATA)**

COUNTRY/REGION  
**USA**



Methane is a potent greenhouse gas with 85 times the warming power of CO<sub>2</sub>. Agriculture accounts for half of anthropogenic methane emissions and offers immediate mitigation opportunities, unlike economy-wide shifts needed for CO<sub>2</sub> mitigation. Recent NASA studies found that 60% of California's methane emissions come from 10% of sources, known as super-emitters. Large livestock producers are key super-emitters and a dominant form of agriculture in the United States. When notified by NASA, unknowing super-emitters responded immediately, offering a blueprint for future methane mitigation policies.

We offer a three-tiered proposal to address two main challenges shaping agricultural methane mitigation efforts: identifying emissions and incentivising action.

Motivated by a slate of new methane satellites, Level 1 will

use satellite imagery to monitor individual farms, making crucial emissions data available. This data will be used for Level 2: a low-methane certification standard. Certification lets responsible farmers brand themselves in the marketplace, empowering consumer choice in dairy and meat, methane mitigation practices. Level 2 is an opt-in approach, but Level 3 will integrate methane data into agricultural policy. Current farm subsidies in the US and EU are agnostic of emissions, but our data infrastructure and certification will enable subsidies to be tied to methane. This three-step approach gives industrial agriculture—a major methane emitter—the data and incentives needed to drive significant mitigation. Tackling agricultural methane offers a realistic path to achieving the Global Methane Pledge's goal of reducing methane emissions to reduce warming by 0.2°C by 2050.

## AFFORDABLE SUSTAINABLE HOUSING PROGRAMME - 'PROGRAMA DE ACCESO A LA VIVIENDA SUSTENTABLE' (PAVS)

HIGHLY COMMENDED  
TEAM NAME  
**DECARBONIZING CONSTRUCTION FROM THE GROUND UP**

COUNTRY/REGION  
**URUGUAY**



The programme looks at incentivising the demand and supply of housing solutions that make intensive use of construction materials and components based on sustainably managed sources, thus significantly contributing towards achieving net-zero. Furthermore, it will contribute to the provision of the 60,000 to 70,000 homes currently needed in Uruguay whilst helping first-time buyers.

The government will implement a framework to evaluate new planning applications and grant progressive corporate income tax breaks to developers (e.g. buildings with at least 50% wood or other biomaterials will be granted a 5% exemption). Moreover, the government will set up assessment mechanisms for wood-intensive projects and fast-track their approval.

Likewise, a shared equity scheme ('PAVS') will enable purchasers to buy specific new-build homes from registered homebuilders whose developments rank over a threshold in the carbon emission framework. The state buys a share between 30% and 70% of the new home, so purchasers will pay a mortgage on the share they own and below-market-value rent on the remainder to the National Mortgage Bank. The purchaser needs to raise a 5%-10% deposit, with a 20%-65% mortgage making up the rest.

Furthermore, 'PAVS' saving accounts will allow prospective buyers to save toward their deposits by investing the capital in the local forestry sector. The objective is two-fold: Firstly, it allows consumers to reach their deposit goal sooner. Secondly, it extends the state's stake in the initial stages of the value and supply chain of the local forestry industry.



## OPTIMAL SCHEDULING OF GREEN HYDROGEN PRODUCTION AS A MITIGATION STRATEGY FOR TAMING THE DUCK CURVE AND REPLACING GREY HYDROGEN IN INDIA

TEAM NAME  
**TEAM OORJA**

COUNTRY/REGION  
**INDIA**



- Grey hydrogen has a significant carbon footprint
- Grid renewable energy (RE) penetration is limited by high generation ramping requirement (Duck Curve)

Green hydrogen production is a solution. We propose an optimization model where surplus renewable energy during off-peak hours can be utilised in electrolyzers for producing green hydrogen and flattening the duck curve. Electrolyzers will act as demand-response agents, thereby enhancing grid-security and increasing the renewable energy capacity utilisation factor.

This proposal identifies the economics of green hydrogen production, transportation and storage as the key bottlenecks impeding its adoption.

Policy interventions required:

- Incentivise electrolyzers through government production of a linked incentive scheme.
- Renewable energy developers to install electrolyzers and have risk-free power purchase agreements.
- Initiate zero emission credit programs for green hydrogen-intensive industries.

Solutions are scalable (measured on PEST and SMART metrics) since:

- They align with the government's priority of green hydrogen adoption, thus providing political and social economy.
- Sector-specific yet high-impact solutions instead of an economy-wide approach. These will therefore have a specific, measurable and achievable outcome.
- Incentivising solutions using existing technology makes green hydrogen adoption economically viable.

## ETS PLUS (ETS+)

TEAM NAME  
**CARBON KILLERS**

COUNTRY/REGION  
**EUROPE**

The current EU-ETS system allows for trading emissions allowances. For example, if installation A emits less CO<sub>2</sub> than its allowance, it can sell extra allowance to installation B which needs additional allowances. This scheme does not lead to a total emission reduction in a given year.

- We propose:
1. An alternative option for installation B, where instead of buying the allowance from

- installation A, it can invest an equivalent amount of money in a carbon capture and storage (CCS) project at any stage of the CCS value chain.
2. A fixed quota for CCUS projects in the EU Innovation Fund.

To ensure this, we require a rapid scale-up of the CCS infrastructure which needs to be supported by government funding to de-risk the initial investments. The solution for many CCS projects could be to collaborate within a multi-industry hub. This will allow companies to avoid high upfront costs associated with creating standalone CO<sub>2</sub> transport and storage.

Geological storage capacity is a challenge for some countries. Thus, cross-border transportation

agreements alongside cost sharing proportional to countries' historical emissions would also be an opportunity for collaboration.

Maximizing the CCS supply chain will attract more industries to invest in CCS rather than buying emission quotas, prevent carbon leakage, reduce net CO<sub>2</sub> emissions and accelerate technology research to decrease the cost of CCS on the long run.

Enabling the circular carbon economy via industrial clustering by incentivising CCUS is one of our best chances of meeting Europe's ambitious 2030 and 2050 climate targets.



## EATING OUR WAY OUT OF CLIMATE CHANGE

TEAM NAME  
FOOD LOOP

COUNTRY/REGION  
SOUTH EAST ASIA



The food system – with all its processes and complex relationships from production and preparation to consumption and disposal – has a huge impact on the emission and sequestration of greenhouse gases (GHGs).

Using Malaysia as the initial setting for this policy, team Food Loop proposes a National Food Policy that is determined to achieve a holistic food system that delivers net-positive impact to solve the climate crisis and deliver the SDGs by 2030 for our collective survival and well-being. The policy aims to reconcile food security, economic development, climate and environmental needs through systems thinking, circular economics, regenerative agriculture and just transitions.

With carefully designed changes in the various processes involved in the national food system of every country, the potential for total GHG emissions to be reduced

is considerable. Conversely, sequestration of carbon through better systems within our food resources could help each state toward a global net zero goal, if not a net positive impact.

At the most fundamental level, the problems of the current system can be traced back to the lack of a whole-systems approach to food. Technologies and solutions are, more often than not, piecemeal and focused on specific actors and/or sectors only.

Ultimately, this policy aims to reconnect people to food systems through their emotional responses toward food and advocate for all the key actors within this system towards a common vision for sustainable change. This will, in turn, strengthen the overall governance of how food is managed on a global scale.

## ACCELERATING RURAL ELECTRIC VEHICLE (EV) MOBILITY IN INDIA AND SOUTH ASIA

TEAM NAME  
RE-CHARGE

COUNTRY/REGION  
INDIA



The Government of India's goal to have 30% of all vehicles sold being EVs by 2030 currently has an urban focus. Further policy incentives are needed that address specific rural mobility and other challenges. The objective of this proposal is to promote solar integrated EV charging hubs that could be set up by entrepreneurs or businesses for rental and/or sale of EVs in rural/semi-urban demand centres.

Through these proposed policies, annual CO2 reductions could increase by 48% over the current target by 2030.

These hubs would be anchored around e-tractor and e-light-commercial vehicle rentals, leveraging the existing diesel tractor rental market for farmers with small landholdings. In addition to rental and sales of EVs including 2Ws and 4Ws, the hubs would also provide battery charging and EV maintenance services to augment revenues.

Our financial model shows that these EV hubs are financially viable with solar photo-voltaic

integration (internal rate of return of 40%). However, to increase rural EV penetration, EV hubs can be promoted through attractive financing mechanisms (low-cost financing, loan guarantees) coupled with extending existing incentives for solar power and EVs. Having a single window system for approvals coordinated by a nodal agency that also specifies standards for EV hubs and facilitates financing will ensure an easily replicable model that is scalable across rural and peri-urban India. It is also replicable in other South Asian and African contexts.

If 30% of all rural vehicle sales shift to EVs by 2030 through these proposed policies, annual CO2 reductions could increase by 48% over the current target at a very low mitigation cost of \$0.37/tCO2.

## PROMOTING GREEN ECONOMY AND SUSTAINABLE DEVELOPMENT IN ELGEYO MARAKWET COUNTY, KENYA

TEAM NAME  
EAST AFRICA GREEN ENVIRONMENT PROMOTERS

COUNTRY/REGION  
EAST AFRICA

Promoting green economy and sustainable development in Elgeyo Marakwet County, Kenya

Climate change and its detrimental effects on human livelihoods, ecosystems, and national development is an issue for the world and especially African countries. Factors such

as an increase in population, unemployment, lack of knowledge, and low investments on renewable energy make it difficult to address climate change impacts.

More than 70% of Africa's population relies on biomass for cooking, resulting in over-exploitation of forest and woodland resources, hastening deforestation, and the loss of carbon sinks. Indoor air pollution from traditional biomass use causes about 500,000 premature deaths annually.

This policy aims to foster a green economy and increase renewable energy consumption with the overall objective of enhancing forest cover and usage of renewable energy. The specific objectives are:

1. Acquire and disseminate information to raise public awareness of climate change and renewable energy sources and technologies

2. To promote sustainable production and utilisation of biofuels (briquettes)
3. To promote the conversion of waste to energy
4. Promote environmental monitoring using space-based products
5. Increase the area covered by forests and reduce carbon emissions.

The policy anticipated outcomes are:

1. Increased access to reliable, economical, and modern energy services—achieved through encouraging the deployment of appropriate or low-cost energy supply technology.
2. Reduced greenhouse gases in the atmosphere by extensive tree planting that act as carbon sinks.
3. Improved public knowledge of energy resources, services, and initiatives, as well as climate change's effects.

## A THREE-FOLD POLICY FRAMEWORK FOR THE CONVERSION OF FOOD WASTES TO RESOURCES IN SUB-SAHARAN AFRICAMARAKWET COUNTY, KENYA

TEAM NAME  
WARESMA

COUNTRY/REGION  
SUB-SAHARAN AFRICA

The Food and Agricultural Organization of the United Nations estimates that at least 37% of food in Sub-Saharan Africa (SSA), worth USD 4 billion and capable of feeding up to 48 billion people, is lost between production and consumption. Food waste continues to pose serious threats including clogging water-bodies, air pollution, public health concerns and greenhouse gas emissions, among others.

We propose a novel three-fold policy framework for utilising food waste at municipal level:

1. Measuring, tracking, monitoring, and creating awareness on food waste generation using appropriate tools such as the global food loss and waste tracker.
2. Creating financial and tax incentives or subsidies for waste-conscious companies and individuals, as initiatives to promote waste prevention and reduction in the waste management hierarchy.
3. Reuse and recycling of food waste to either recover bio-nutrients or for energy production using sustainable technologies such as hydrothermal carbonisation and enzymatic degradation.

With this policy we aim to put back food waste into the ecosystem to support food production which will subsequently improve farmers' income and address the issue of malnutrition, which affects over 264.2 million people in SSA.

37% of food in Sub-Saharan Africa, capable of feeding up to 48 billion people, is lost between production and consumption.

This will also provide alternative energy sources that can generate over 10 MJKg-1 from food waste alone, create close to 1 million green jobs in SSA municipalities, and generate income for firms venturing into the waste to energy market.

Achieving this policy is feasible as low-cost techniques are available which do not require complex expertise, so they can be easily adopted by local communities in SSA.



FOSSIL FUEL  
MANAGEMENT  
AND INTEGRATED  
RESOURCE  
RECOVERY OF  
BIOFUEL AND  
PLASTIC RECYCLING  
MANAGEMENT

TEAM NAME  
CLIMATE BUSTERS

COUNTRY/REGION  
PAKISTAN



Our policy proposal focuses on three aspects of mitigation strategies. For example, efficient fossil fuel management, biofuel, and plastic recycling with an integrated resource recovery approach.

The key idea – fossil fuel management – is based upon development of an energy roadmap of Pakistan which can practically reduce carbon emissions by 30%, merely by prioritising low carbon fuels. Secondly, we propose the introduction of carbon taxes in the country for the industries. Finally, we propose control of industrial emissions by mandating development and implementation of net zero strategies aligned with global goals.

Solid waste management – especially plastic – is a growing concern in Pakistan due to the rapidly increasing quantities of waste, population growth and inadequate technical and institutional capacity. Pakistan ranks 15th on the list of countries with the most mismanaged plastic. The River Indus, the main waterway of Pakistan, is among the top 10 most polluted rivers in the world. Utilising the integrated resource recovery approach to turn waste into a resource, plastic may be segregated and turned into a raw material called ‘plastic lumber’. This material has wide ranging applications due to its durability, low maintenance and recyclability.

Biofuels – utilised for domestic fuel demand and power generation – can be generated by collecting waste and biomass using the integrated resource recovery approach, including bioreactors and digesters performing anaerobic digestion. The carbon footprint of biofuels is below 10% of conventional fossil fuels. Utilising significant agricultural and municipal waste in Pakistan, we aim to convert at least half of the fossil fuel plants to co-firing or co-generation by 2050.



“

The power sector of Pakistan overwhelmingly relies on fossil fuels which comprise 61% of the total generation capacity.

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GUINEA PLASTICS  
FOR UNIVERSAL  
HEALTH  
COVERAGE

TEAM NAME  
GUINEA ZIAMA TEAM

COUNTRY/REGION  
GUINEA



In Guinea, plastic bags remain a huge environmental and socioeconomic issue. According to available data from the Guinean ministry in charge of public-private investments, more than 80% of household waste is disposed of in streets with less than 20% of it being recyclable. This is obvious in the capital Conakry, where it

is not unusual to see households disposing domestic wastes on public streets.

Due to a lack of adequate waste management systems, most of these households burn their waste in the open air, leading to environmental pollution with emission of greenhouse gases such as carbon dioxide, marsh gas and nitrous oxide. The repercussion of this mismanagement goes beyond environmental disasters. In August 2017, 8 people were killed by a mountain of garbage.

Furthermore, despite the dearth of evidence, studies on the leading causes of mortality and morbidity in Guinea place lower respiratory infections and diarrhoea as the first and forth highest causes of death in 2019. Air pollution was identified as

the second risk-factor driving these deaths and morbidities.

On other hand, the current environmental code and its application texts are weak in terms of eco-design and product lifecycle. Industries manufacturing plastics are often not accountable for the product life-cycle and their measurements only cover the production phase of their products.

Our approach will include lobbying at the community level, but will mainly focus on lobbying at the level of decision-makers for the development and adoption of a policy on the use of plastic bags in Guinea. The means of developing this policy will be elaborated upon in the next steps.

ENABLING  
RETROFITTING TO  
ACCELERATE THE  
TRANSITION TO  
ZERO EMISSION  
VEHICLES

TEAM NAME  
EV ANDERSCIONS

COUNTRY/REGION  
GREEN MOBILITY



The shift to zero emission vehicles is associated with replacing existing internal combustion engines (ICEs) with new electric vehicles (EVs). However, there are currently more than a billion ICEs comprising 10% of global emissions and it is the fastest growing sector. The team believes that the envisioned transition can be accelerated by allowing the retrofitting of existing ICEs into EVs, thereby fostering environmental, economic, legal and health benefits.

By creating an enabling environment for large-scale vehicle retrofitting by original equipment manufacturers (OEMs) beginning in 2025, it will immediately reduce emissions from the existing fleet of ICEs. It will also address the recycling challenges spawned by the projected scrapping of ICEs.

Economically, this is attractive to OEMs as it will protect their market share from new EV producers,

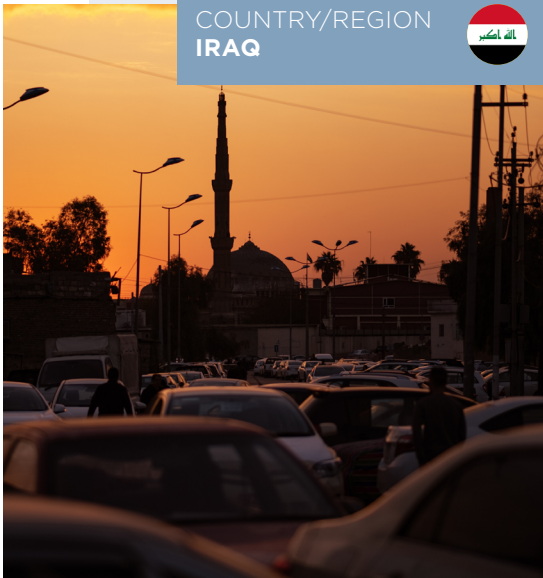
boost local employment, and cost significantly less in terms of government subsidies. For vehicle owners, it means less financial outlay while giving greater choice as to whether to retrofit or buy a new EV, depending on one's budget. Technical and legal issues are also addressed since OEMs know more about the technical and design specifications of their models. Hence, warranties are not voided whilst consumer product safety is ensured. Health-wise, an earlier transition to EVs translates to cleaner air, especially in developing countries.

To encourage early retrofitting, a range of additional measures should all be considered. These include tax incentives for OEMs, a descending subsidy on conversion, road vehicle support, insurance perks, free parking and charging, priority access and/or access to restricted lanes, and sufficient EV charging points.

CARBON-  
OFFSETTING  
TARIFF ON FOSSIL  
FUEL VEHICLES  
IN IRAQ FOR  
REFORESTATION

TEAM NAME  
MESOPOTAMIA TEAM

COUNTRY/REGION  
IRAQ



During the last two decades, the number of fossil fuel cars in Iraq increased from 1.4 million cars (2002) to 7.1 million cars (2020). CO2 emissions have increased from 5,400 tons per day (2002) to 27,233 tons per day (2020), becoming a major contributor to the air pollution in Iraq.

In addition, data from Berkeley Earth show the warming rate in Iraq is double the rate of warming on earth as a whole (MIT, Eltahir, 2020). All of this is made worse by the destruction of green areas around and inside cities in Iraq in the last two decades. Reforestation is therefore an essential element to reduce pollution and mitigate the effect of climate change in Iraq.

We propose a carbon-offset tariff to be imposed by government on the usage of fossil fuel vehicles. The tariff can be collected through different points. These include fuel-filling stations as a fixed rate per litre of fuel, or annual fees added to license-fees and renewals, as well as additional taxes imposed on car dealers.

The collected tariffs will be used for reforestation purposes.

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Data from Berkeley Earth shows the warming rate in Iraq is double the rate of warming on earth as a whole.

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Reforestation is proven to reverse climate change, quietly offsetting carbon emissions for centuries. A tree absorbs anywhere between 10 and 50 kg/year of CO2.

With 1.4 tons per year of CO2 omitted per car in Iraq, 56 trees per car are needed. In some projects around the world, land and tree-planting costs average \$5 per ton (savingnature.com). Hence, the estimated cost to offset annual CO2 emissions from vehicles in Iraq through reforestation and tree planting is 50 million USD annually (or 7 USD per car).



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SCHOLARSHIPS



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