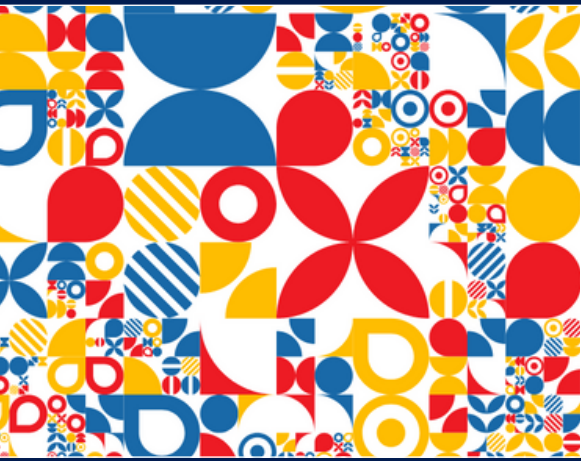


2023 BUDGET STATEMENT REVIEW



Is Government "Walking the Talk" of Nature-based Solutions to Climate Change?



2023 GHANA BUDGET STATEMENT

Is Government “Walking the Talk” of
Nature-based Solutions to Climate
Change?

Cover images: Ariel view of the Lake Bosumtwi in the Ashanti Region of Ghana. Credit-
A Rocha Ghana

IS GOVERNMENT “WALKING THE TALK” OF NATURE-BASED SOLUTIONS TO CLIMATE CHANGE?

- Ghana Government’s 2023 Budget statement and economic policy in review



Atewa forest tree Photo credit Jeremy Lindsell.

INTRODUCTION

Undervalued and overused, Ghana’s biodiversity and ecosystem services are collapsing. Recent declarations by the Ghana government committing to forest protection and restoration have thus brought some hope. At the 2022 Conference of Parties (COP27) for the United Nations Framework Convention on Climate Change, Ghana’s President said Africa’s vast land gives the continent the greatest potential to help decarbonise the world through regenerative agriculture and reforestation with strong biodiversity content. Reinforcing these words, the Minister for Lands and Natural Resources, Mr. Jinapor, stated during the COP,

"We are at a stage in the climate struggle where mere talk, commitments, declarations and/or pledges are not enough. We must walk the talk, and Ghana, under the distinguished and outstanding leadership of President Akufo-Addo, is delivering verifiable forest and nature-based solutions to climate change".

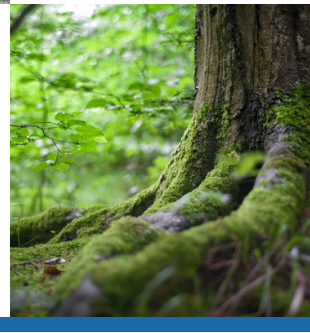
Recognition of the urgency of climate change and some of its solutions are evident. But are they really walking the talk?

With government having just taken on the new role of co-chair of the Climate and Forest Leaders' Partnership (FCLP) at COP27, expectations are high for forest-positive action. It means government cannot falter on its promises of forest protection and nature-based solutions to climate change. Accepting this role to lead the global leaders means it must now show the way. Jinapor has promised to work with the FCLP partners and other global leaders to protect and restore the forests for sustainable use. Does Ghana's 2023 budget support this encouraging pledge?

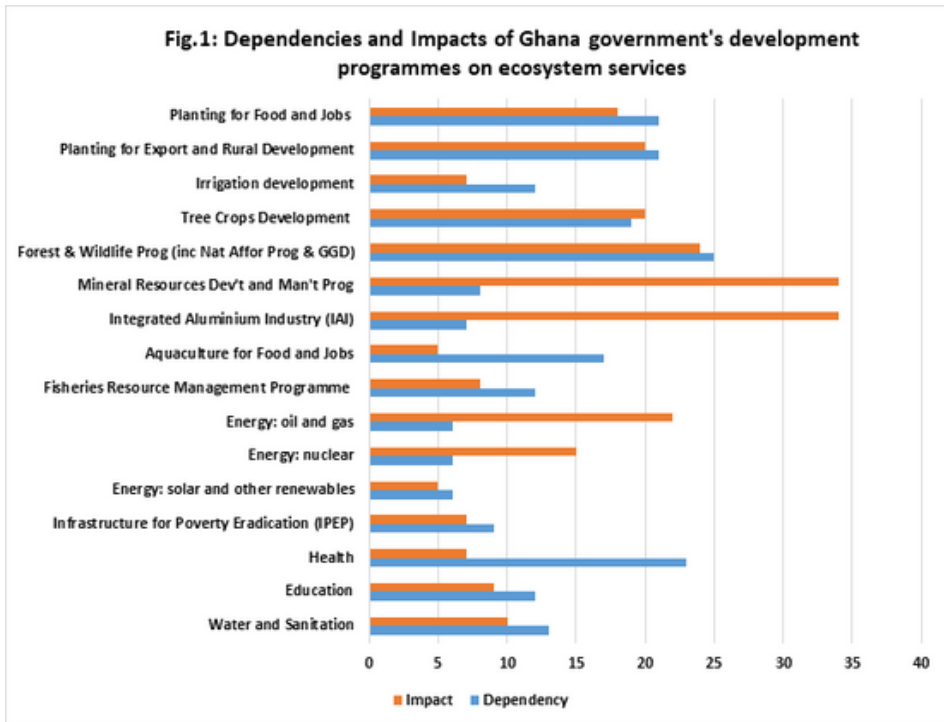
This review assesses the national budget statement for its commitment to ecosystem services, nature, and communities' rights. We looked at a range of sectors that depend on or impact ecosystem services. The review shows that, if efforts are not increased to eliminate negative impacts, then the sustainability of programmes with high dependence have an uncertain future.

LIST OF PROGRAMMES AND SECTORS REVIEWED:

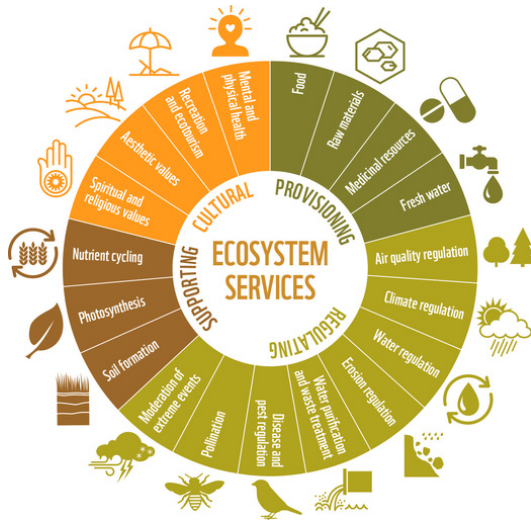
- Planting for Food and Jobs
- Planting for Export and Rural Development
- Irrigation development
- Tree Crops Development Authority
- Forest and Wildlife Programme (including National Afforestation Programme & Green Ghana Day)
- Mineral Resources Development and Management Programme
- Integrated Aluminium Industry (IAI)
- Aquaculture for Food and Jobs
- Fisheries Resource Management Programme
- Energy: oil and gas
- Energy: nuclear
- Energy: solar and other renewables
- Infrastructure for Poverty Eradication (IPEP)
- Health
- Education
- Water and Sanitation.



Development programmes and their dependencies and impacts on ecosystem services



The figure 1 shows the impacts and dependencies of the selected government programmes. Government's **Forest and Wildlife Programmes** including afforestation and the Green Ghana Day have the highest dependence on ecosystem services, and impact both positively and negatively. Tree planting and forest restoration, for example, bolster ecosystem services such as clean water, air quality regulation, erosion prevention, and moderation of extreme events. Ghana's agricultural programmes are also highly dependent on ecosystem services particularly regulating services (see fig.2), but they also impact on them – mostly in a negative way – for example by removing trees and vegetation leading to soil erosion, or by using chemicals that kill non-target species such as pollinators and natural enemies of pest species. Ghana's farmers must be empowered to use organic and agroecological farming techniques. These systems support and nurture the ecosystem services they depend on by establishing beneficial relationships and healthy feedback loops between farmers and nature. They also strengthen community food security and climate resilience.



(Figure 2)

Ghana's **mining programmes**, as expected, impact negatively on all ecosystem services due to the removal of vegetation and habitats from mine sites, and subsequent loss of all ecosystem services these provide. Other impacts include pollution of water and air with dust, sediment and hazardous pollutants that damage ecosystem services such as local climate and air quality regulation, and fresh water.

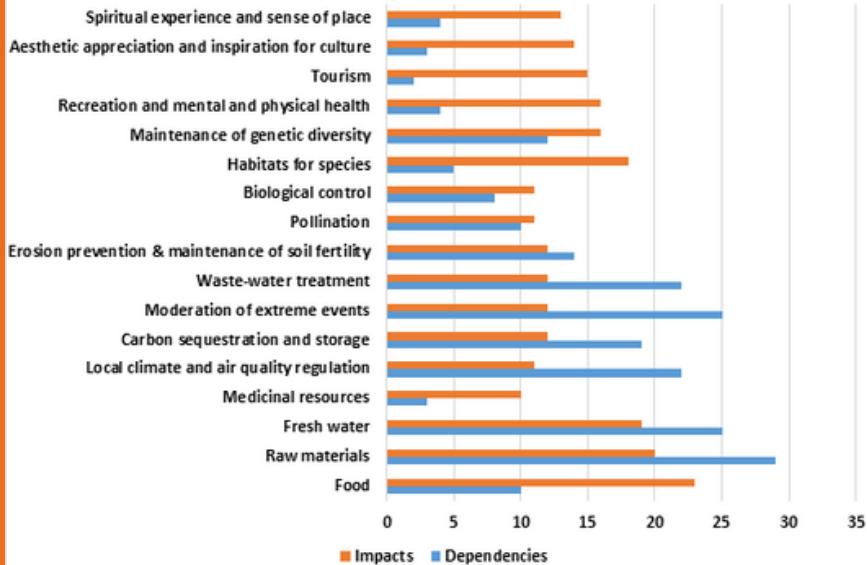
Energy production has mixed impacts. Ghana's determination to pursue nuclear energy – which takes an average of 14.5 years to complete – is both worrying and baffling. It is worrying because nuclear is so dangerous. Will Ghana really be prepared for a nuclear emergency? Also the disposal of waste that remains hazardous for hundreds of thousands of years, leaving young people and future generations with an unjust burden.

Nuclear energy also causes considerably more carbon dioxide than solar voltaic and windfarms. The choice is baffling because, by contrast, utility scale wind and solar farms are ready to go in an average of 2 to 5 years, while rooftop solar PV projects are down to 6 months. Windfarm energy also costs around a fifth of nuclear energy per kilowatt-hour (kWh). (Jacobson, M.Z., 2021, The 7 reasons why nuclear energy is not the answer to solve climate change. Heirich Böll Stiftung, Brussels). The government is setting up consumers for a very long wait for a very expensive energy source. Solar and windfarms produce no dangerous wastes and present no long-term hazardous threat to life. Why wait 14.5 years, or possibly longer, for an energy source that is so dangerous and so costly for consumers?

The service sectors of health, education, water, and sanitation have low impacts on ecosystem services but are highly dependent on their quality and sustainability. It is obvious that health depends on good food, fresh water, medicinal resources, and recreation. Perhaps less obvious is that it also depends on aesthetic appreciation, inspiration for culture, spiritual experiences, and sense of place. This is particularly true for our mental health, and is why access to green spaces in urban areas is so very important. Ghana's urban planners appear not to value green spaces and are instead determined to concrete, pave, tarmac, and build over every corner of urban nature.

Ecosystem services most impacted and depended on

Fig.2: Ecosystem services most impacted and depended on by Ghana government's 2023 development programmes



Impacts:

The most impacted ecosystem service is food due to the impacts of many development programmes on communities' access to lands and resources critical for food production, as well as impacts on resources and services that food production depends on, and the impacts on wild foods such as fruits, nuts, berries, and fish. Meanwhile some programmes have a beneficial impact on food such as planting for food and jobs, and aquaculture and fisheries programmes that aim to strengthen food security. Raw materials, fresh water, and habitats for species are also very impacted due to the environmental damage due to extractive industries such as mining. Cultural services of spiritual experience, sense of place, aesthetic appreciation, inspiration for culture, tourism, recreation, and mental and physical health are affected by most development programmes due to their impacts on natural green and blue spaces where people go to relax, play games, admire the trees, flowers and animals, and gain peace, tranquillity, and inspiration from nature. Some of the regulating services such as erosion control, maintenance of soil fertility, pollination, and biological control are highly impacted by agriculture. This is due to unsustainable practices such as over-dependence on inorganic fertilisers, insufficient return of organic matter to soils, excessive soil tillage exposing soils to extreme weather, and agro-chemical use that kills insects critical for pollination and biological control.

Dependence:

The high dependence of government's development programmes on ecosystem services is a key reason why negative impacts must be eliminated or minimised, and positive impacts maximised. Raw materials is the most depended on service because so many of government's programmes are extractives such as mining, or depend on natural resource inputs in other ways. Also high on the list are fresh water, moderation of extreme events, local climate and air quality, and wastewater treatment.

Government's agriculture programmes such as planting for food, jobs, and export are highly dependent on healthy ecosystem services, in particular fresh water, soil fertility, erosion control, pollination, biological control, maintenance of genetic diversity, local climate and air quality regulation, carbon sequestration and storage, and moderation of extreme events. Loss of the latter has perilous impacts as floods, droughts, and extreme heat destroy crops and land. Several other programmes also depend on moderation of extreme events as their activity or the infrastructure they depend on – such as energy infrastructure – could be damaged by extreme weather. Wastewater treatment is another service much depended on by sectors such as mineral resources development, energy production (coolant), health, education, infrastructure for poverty reduction, and sanitation. Carbon sequestration and storage is another critical service because of its importance in mitigating climate change and the many programmes that would be damaged as climate change worsens.



Rainforest Kapok tree-Kumasi-Ghana. Credit: Robert Ford

Figs.1 and 3 show clearly why nature must be used carefully and sustainably, and that negative impacts on ecosystem services such as pollution, overexploitation of natural resources, and damage to the environment must be avoided and minimised as far as possible. If not, Ghana's programmes that are very dependent on healthy ecosystem services including for food security will not be sustained, especially in this era of worsening climate change. Government should look more at green development alternatives and reduce dependence on damaging sectors such as mining.

The next part of this review discusses government's economic sector programmes in terms of sustainability, biodiversity, and ecosystem services, with recommendations to reduce negative impacts and contribute positively to nature and communities.



Canopy walkway in the Kakum National Park in Ghana. Credit: Getty Images

FORESTS & BIODIVERSITY

Biodiversity is mentioned only once when the budget statement says government will review the National Biodiversity Strategy and Action Plan (NBSAP) in 2023. Nature is only mentioned in terms of debt-for-nature swaps as a means of financing climate action measures. This is disappointing. Even nature-based solutions are not mentioned. Securing healthy nature and biodiversity is critical for communities and farmers' climate resilience building. Rural communities depend heavily on nature's capacities for protection from storms, floods, and droughts, control of soil erosion during the increasingly heavy rains, pollination of crops and biological control of pests, and provide food, clean water, and other resources for subsistence and livelihoods. Lack of commitment to nature and biodiversity protection is also an injustice to young people and future generations.

GREEN GHANA DAY

2022

*24 million tree seedling
with GHS 9.6m*

2023

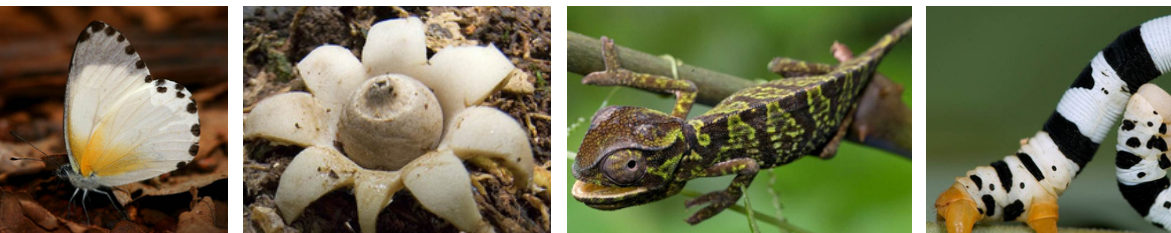
*20 million tree seedlings
with GHS 2.5m*

It is encouraging to see that government plans to raise and plant about 20m tree seedlings for Green Ghana Day 2023 after the 24 million reportedly planted in 2022 with GHS 9.6m. However, 2023's planting is with a vastly reduced budget – down to just GHS 2.5 m from a projected GHS 11.5m. It is disappointing to see these large budget cuts for critical nature based solutions to climate change while non-critical areas receive large budgets, such as the national cathedral with GHS 80m. This is not walking the talk of government's commitment.



View of the Atewa Forest Photo credit Jeremy Lindsell.

There are plans under the National Alternative Employment and Livelihood Programme (NAELP) to restore 1000ha of degraded lands, raise 1 million economic trees for plantation development and reforestation, and establish 10 tree seedling nurseries to create 100,000 jobs. The Forestry Commission also plans to establish 25,000ha of forest plantations. While job creation in the forest and environmental sectors is good, we must point out that plantations and reforestation with economic trees will not bring the needed biodiversity and ecosystem benefits. We urge government to strengthen protection of the existing forest and to ensure restoration and reforestation efforts use a diversity of indigenous trees species to mimic the lost natural forest. Plantations are temporary and lack diversity, so they do not bring the biodiversity and long-term benefits that nature's systems depend on. When reforestation is biodiverse, it supports many ecosystem services – such as habitats for species, pollination services, and biological control – that government's other development programmes such as agriculture depend on.



The Minister for Lands and Natural Resources recently commented that,

The commitment of the Government of President Akufo-Addo, to protect our forest resources for current and future generations remains total and unflinching”.

This is not evident in the budget statement. Also, the President and government's persistence in their plans to mine Atewa Forest is completely the opposite. This does not demonstrate 'total and unflinching' commitment to future generations. Instead, it risks their rights to clean water, clean air, livelihoods, life, and good health. We are still hopeful government will reverse this agenda and truly 'walk the talk' of forest protection and nature based solutions to climate change.



The World Bank recommends integrated landscape strategies and planning at the district level for forest ecosystems to balance competing needs of food, livelihoods, energy, water, and ecosystem services. It also advises reform of land and tree tenure to encourage farmers to adopt natural regeneration, plant trees, and manage trees on farms. It also recommends scaling up community-level natural resource management and enhancing institutional capacities for monitoring and reporting on the state of forests. This is all good advice and, to these points, we add the following:

- Designate the Atewa Forest as a National Park and collaborate with local communities and private sector to develop ecotourism and nature-based tourism facilities, services, and activities for income generation by the communities and local and national government
- Do not permit any scale of mining in Forest Reserves.
- Increase protection of all headwater ecosystems and rivers. The sustainability of government's water projects depends on the protection and sustainable use of water bodies and the ecosystems that protect them. If not, water security will be further threatened. Galamsey is already damaging water sources. They should not be risked further
- Avoid plantations of single or few tree species. These do not provide benefits for biodiversity and only bring temporary climate mitigation due to their comparatively short timescale
- Strengthen monitoring and enforcement of Forest Reserves to stop mining, illegal logging, illegal farming, poaching, and other damaging activities. The illegal damage is already too much.
- Protect green spaces in urban areas, and reverse the degazetting of part of the Achimota Forest Reserve. It performs critical ecosystem services for Accra.
- Stop cutting down trees for roadbuilding; work around them instead, and replant those already lost such as the decades-old trees outside UPSA and Legon Gardens. Also plant trees in urban spaces such as Tetteh Quarshie interchange and along main roads.

MINING & ENVIRONMENT

Mining, both large and small scale, legal and illegal, is extremely damaging to the environment and to human rights. The year 2022 has seen more needless deaths, including people of all ages falling into and drowning in galamsey pits, miners buried alive by mine pit collapses, individuals killed by mine security guards, and deaths caused by mine explosives. Now there are cases of mercury poisoning in both miners and non-miners. Although mining is important to Ghana's economy, there are certain locations that must be completely off limits to ensure respect for life and the environment. These include forests, all forest reserves, water bodies, farmlands, and communities to mention a few.

The Minerals Commission initiated further actions in 2022 to address galamsey, including recruiting and training river wardens to patrol rivers identified as galamsey sites, acquiring boats for river monitoring, and setting up a tracking system for earth moving and mining equipment. Despite this, December 2022 reports from communities in Atwima Mponua District on the River Offin – a river utterly devastated by galamsey – show that galamsey there is alive and kicking. The communities' reports also claim that, instead of arresting the galamsey operators, the police arrested a community activist (Eco-Conscious Citizens).



While government's attempts to address the problem are well noted, more must be done, especially to find and imprison galamsey's kingpins, including those in their own party. We still wait for action on Mr Antwi-Boasako following the illegal activities of his mining company Akonta Mining Ltd.

Largescale mining is also spreading across the country, promoted by government instead of the many green development alternatives that could be pursued. A look at Ghana's mining cadastral map shows the southwest of Ghana strewn with mining licences including in Forest Reserves, and increasingly the north too. Government is now urging mining investments in locations that have so far been spared, such as Oti Region where iron ore has recently been discovered. In defence of local communities and mindful of their struggles, the Catholic Bishop has rightly highlighted the lack of benefits returning to local communities from mining, along with the intensified challenges it brings for life and livelihoods, and the increased risk of disasters. But the Oti Regional Minister is determined. Is this really walking the talk?

The Minerals Commission has distributed over 4 million oil palm seedlings to farmers, intending to add 2 million more by the end of the year and more in 2023. This is under its Alternative Livelihood Programme to generate jobs and minimise illegal mining. It has also restored 344ha of degraded mine sites. This is very positive but there are vast swathes of land that need restoring, but the costs are phenomenal. As far back as 2017, the estimated cost to reclaim Ghana's lands and water bodies affected by galamsey was USD 250 million (IGC, 2019). It has become far worse since then.

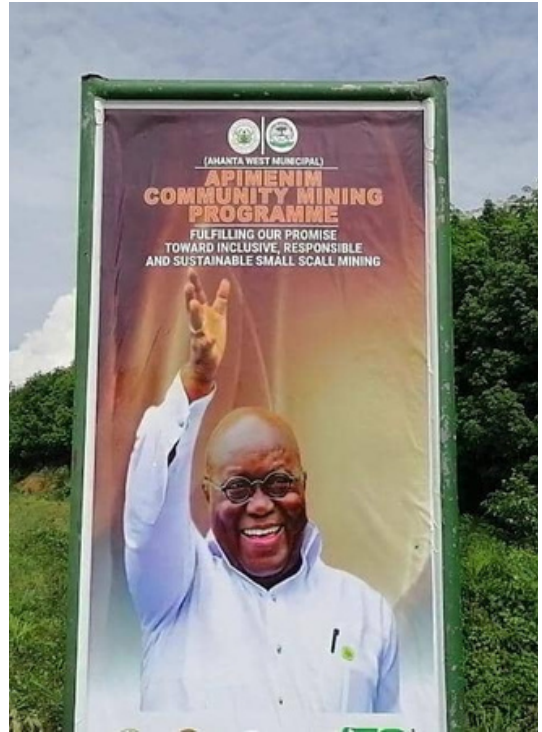


Destruction from illegal mining meted out on the Atewa Forest. Photo Credit- A Rocha Ghana

Community Mining Scheme

In the 2022 budget, the Minerals Commission planned to establish 105 Community Mining Schemes (CMS) with over 1,546 concessions and creating 926,300 jobs to help regulate small-scale gold mining and address galamsey. The 2023 budget statement reported that 65 schemes in eight mining districts have been launched and operationalised, creating 39,500 direct and indirect jobs, a small fraction of the number envisaged. The Minerals Commission intends to continue rolling out the CMS in 2023, but no targets for concessions or jobs are given. Under the National Alternative Employment and Livelihood Programme (NAELP) however there are plans to train 20,000 “illegal miners and potential illegal miners” and 200 small-scale mining companies in mine health, safety, and use of safe and sustainable ore extraction techniques.

As we stated last year, although the intentions of community mining to create jobs, address galamsey, and ensure small-scale mining is legal and sustainable are good, it requires very careful implementation and monitoring to ensure it ameliorates instead of exacerbates the galamsey challenge. Reports over the year show that at least one of the CMS has been initiated within a forest reserve, while another so-called community mining scheme is actually a galamsey site masquerading as an official CMS. These show exactly why we have been concerned.



A Community Mining billboard mounted in the Apimenim community. Photo Credit-3news.com

We reiterate that monitoring and reporting on social, environmental and economic impacts within the CMS concessions and on the surrounding communities and environment is vital, and that no CMS should be initiated in forest reserves or near water bodies – the President’s two red zones for mining – or near farmlands or communities. At this stage, the best action would be to halt any further plans for CMS rollout, and assess the impacts of the existing CMS on communities, jobs, the environment, and especially its effect on addressing galamsey.

Some further recommendations on mining include:

- Immediately drop the plans to mine bauxite in the Atewa Forest. Government must designate it as a National Park to position the landscape to benefit from tremendous green development options such as ecotourism and nature-based tourism, NTFP production and processing, tree crops, fruit juice processing, and manufacture of non-wood charcoal, compost, and natural pesticides.
- Strengthen monitoring and enforcement at key galamsey sites.
- Ghana is confronted with a dilemma where mining is taking seed in our Forest Reserves, an activity that is not compatible with their purpose. We therefore urge that the appointment of the Head of the Forestry Commission should be someone who believes in and strives to fulfil the values, vision, mission, and mandate of the Forestry Commission. The current head has said that the FC is not against mining in forest reserves. This clearly shows he does not aim to fulfil the FC's legal mandate, which is completely unacceptable.
- Revise the cadastral map in MinCom's mining cadastral to ensure it fulfils the requirements of LI.2176. These regulations state "the cadastral map shall be on a scale of 1:50,000 based on the topographic map of the Republic of Ghana produced by the Survey and Mapping Division of the Lands Commission, as well as on the Gauss projection and the British War Office spheroid". The current map is not a topographic map or produced by Ghana's Lands Commission. Another problem is that it does not fulfil one of its intended purposes. Government says the Mining Cadastre Administration System (MCAS) contributes to accountability and transparency, and gives "civil society a better overview of the mining situation in the country"(MinCom Ghana). However, without any forest reserve (FR) or national park (NP) boundaries marked on and only a few main towns and roads and some large unidentifiable turquoise areas, it is virtually impossible for communities, traditional authorities, and civil society to know where on the ground the mineral rights, licences, and concessions are. The FR or NP boundaries were previously marked on using the OpenStreetMaps, but have since been removed, taking away a critical layer of transparency. These boundaries along with other natural and built features such as rivers and settlements should be clear on the map.
- Respect communities' rights to determine how their lands are used. The withdrawal of a mineral rights application by Active Target Natural Resources Ltd together with commitment from the Minerals Commission to not receive or consider any minerals rights application on Mampong Traditional Area in response to letters from the Mampong Traditional Authority and advocacy by local communities is encouraging.
- Investigate the case involving Akonta Mining Ltd and its lack of the legally required lease and permits for its mining operations in the Tano Nimiri Forest Reserve. Ignoring this largescale galamsey activity sets a very bad precedent and suggests people have protection if they are politically exposed.

FARMING & FOOD SECURITY

The government's identified "plank of success" for Planting for Food and Jobs is farmers' increased adoption of improved seeds and fertilisers, but this is not environmentally benign and does not contribute to poverty reduction. It risks tying farmers into an annual cycle of input purchasing, financial burden, and spiralling debt. It also disrupts farmers' traditional seed saving practices. Patented seeds are often illegal to save and use, while hybrid seeds do not produce the same crop the following year. Imported seeds do not perform well under local ecologies and climates while farmers' indigenous seeds do. Far better is to "promote indigenous knowledge and production of seeds" (Alliance for Food Sovereignty Ghana. Seeds of Activism) using indigenous seeds that stand the test of time. Besides the unsustainable input costs to farmers, the inorganic fertilisers and chemical pesticides needed for improved seeds to perform well damage farmers' health and biodiversity. They kill beneficial insects that predate the pests, kill pollinators critical for crop productivity, and harden soil surfaces, reducing water infiltration.

A step in the right direction has been government's collaboration with civil society organisations to hold a National Dialogue on Agroecology, a highly effective system for addressing many of the challenges farmers face such as climate change and declining soil fertility. Government is also promoting local production and use of organic fertiliser, has increased the quota for organic fertiliser supplies, will raise broad awareness on organic fertiliser use, and will build farmers' capacity in Integrated Soil Fertility Management. These initiatives are positive. New local composting enterprises will be needed to fulfil the increased demand.



Concrete evidence exists that cover crops and green manures such as legumes grown between crops are also highly beneficial for crop productivity. Farmers across five African countries using green manures/cover crops to improve soil fertility increased their crop yields from <1 ton to 3 tons/ha/year, and from almost nothing to 2.5 tons/ha/year in low rainfall years. These cover crops also produce large quantities of high-protein food (as they include beans, peas and groundnuts), reduce overall labour requirements especially for weeding and tilling, and – when leguminous trees are used for the soil fertility improver – they provide fuelwood. Because of all these benefits, the systems are very popular with women farmers (Bunch, R. (2022) How Can We Most Effectively Overcome the “Hurricane of Hunger”?). These are low-cost highly effective agro-ecological techniques that government should be promoting with Ghana’s farmers.

The World Bank Country Climate and Development Report advises Ghana to transition to climate smart agriculture through improved water resource management, increased irrigation, rainwater harvesting, intercropping, and agroforestry (World Bank Group (2022) Ghana Country Climate and Development Report.) There is a budget for irrigation development this year, and says it is for both large and small projects, but past irrigation projects have focused on commercial farming instead of small-scale food crop farmers. Rainwater harvesting and storage should be encouraged throughout Ghana to augment water supplies. The annual rainy season usually brings excess water and causes floods, which can be harvested and stored for later use.

The plans for production and distribution of more than double the number of tree crop seedlings shared in 2022 for cashew, shea, coconut, oil palm, mango, and rubber to tree crop farmers is a positive initiative to strengthen farmers’ livelihoods. But the cocoa tree crop sector is faltering. The large drop of 34.7% in cocoa output in 2021/2022 has been blamed on harsh weather, the Cocoa Swollen Shoot Virus Disease, and the impacts of illegal mining, logging, and loss of cocoa trees. There is no mention of the disappearance of cocoa’s natural pollinator midge, or efforts to support its return. Agroecology should be encouraged in cocoa farming as a way of phasing out chemicals and bringing back the ecosystem conducive to the pollinating midges. Also of concern is the cocoa price paid to farmers. This was announced in October as GHS 12,800 per tonne (USD 1,251 at the time, but currently USD 1,047), an increase of 21% on the 2021-2022 season, but will be affected by the cedi’s fall. This, together with inflation and the high rise in prices of goods, means farmers’ real term pay (producer price) will have reduced significantly.

To strengthen the smallholder farming sector, we recommend the following:

- Organise farmer field schools with demonstration plots to train Farmers Based Organisations (FBOs representing food and cash crops), extension agents, district agricultural officers, local NGOs, and communities in agroecology for climate resilient farming. Trainees should then agree to share their skills with their members and rural communities.
- Incentivise financial support and provide microfinance loans for SME start-ups in organic compost making and natural pesticide production to support government's commitment to promote local production and use of organic fertilisers and transition to climate resilient farming
- Government's development of drought tolerant crop varieties should be managed in collaboration with farmers to ensure the seeds are farmer-preferred varieties, not GMOs and preferably not hybrids. This secures farmers' traditional seed saving technologies, and ensures the crops are suited to local ecologies, cultures, and preferences.
- Provide seeds for locally suitable cover crops and green manures (e.g. legumes) that enhance soil fertility and quality, and educate on the benefits of their use. This is a simple action with multiple and diverse benefits for people and nature.
- Support farmers to gain access to climate and weather information, e.g. via WhatsApp from local GMet stations, so they can prepare for extreme weather events and minimise damage to crops, livestock, farms, and homes
- Encourage farmers to plant fruit and nut trees in agroforestry systems to provide an additional source of income, healthy foods, and food security. Tree crops strengthen food security as they are less prone to failure than annual crops during drought and other extreme weather events
- Support cocoa farmers to grow and market high value crops such as voacanga and griffonia. These grow well in agroforestry systems intercropped between cocoa, and their high value makes them excellent options for income diversification.



FISHERIES

The budget mentions the new National Fisheries and Aquaculture Policy that will be the basis for a new Fisheries Act. This new law must contain strong deterrents for Illegal, Unreported, and Unregulated (IUU) fishing, especially the saiko activities (illegal trans-shipments). Many of the foreign commercial fishing trawlers are involved in saiko. It is damaging communities' livelihoods, incomes, and food security, and leading to conflict. Monitoring and enforcement are currently insufficient due to corruption and inadequate human and financial resources, and this must be addressed as a matter of urgency. Illegal actors, if caught, agree out-of-court settlements below the legal penalties of USD1-4 million, so they are not deterred from illegal activities.

The budget recognises the shortfall in Ghana's fisheries for meeting domestic fish demand, but does not mention improved monitoring and enforcement as a means to control saiko activities to increase domestic access to fish. Instead of confronting saiko, the plans for fisheries management look like the intention is to increase aquaculture to fill gaps in demand. Government must not let the marine fisheries sector go.

The marine fisheries should be reclaimed from foreign fishers in their entirety and secured for Ghana's own fisher folks, as coastal communities gain little from foreign commercial fishing activities.

To rebuild fish stocks, government should also promote restoration of natural nursery grounds especially mangroves that provide food and shelter for young fish before they leave for the ocean. Establishing Marine Protected Areas with permanent fishing bans would also help rebuild and sustain fish stocks. These can be used alongside the annual fishing ban and would be more effective in helping stocks to increase.



**Mangroves around the Keta Lagoon Complex Ramsar Site.
Credit: A Rocha Ghana**

Further recommendations are:

- Adequately resource fisheries monitoring and enforcement especially of foreign commercial trawlers to check for saiko. This is vital. When Ghana's fisheries are destroyed, the foreign vessels can move on. Ghana's fisher folks cannot. Protect Ghana's fisheries for Ghana's fisher folks and their livelihoods.
- Identify and implement measures to secure the safety of on-board fisheries monitors
- Do not permit out-of-court settlements on cases of saiko by foreign commercial fishing vessels. Fines or imprisonment written into law will never serve as a deterrent as long as the culprit knows they can agree an out-of-court settlement
- Strengthen Ghana's fisheries laws with sufficiently strong penalties to act as real deterrents
- Deal with corruption in the sector.



Top: Fish traps on the Volta River. Photo Credit- A Rocha Ghana. Bottom: A Fish market in Accra. Photo credit-citineewsroom.com



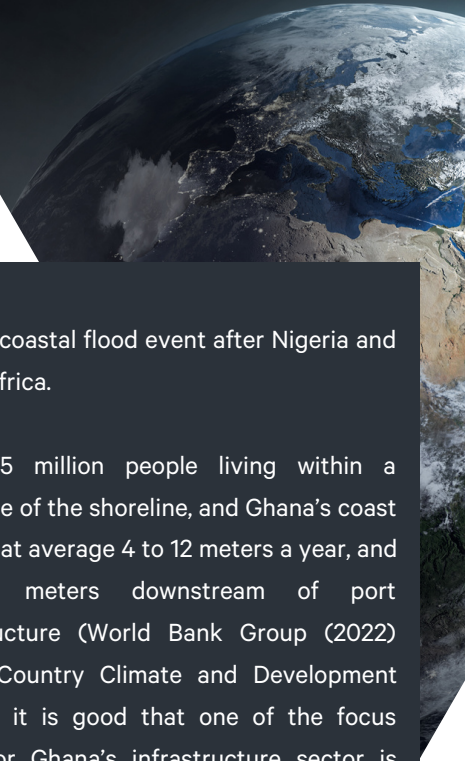
CLIMATE CHANGE

At least a million people in Ghana could fall into poverty due to climate shocks, while incomes could reduce by 40% for the poorest households by 2050, according to the World Bank's report ((2022) Ghana Country Climate and Development Report). Although the Ghana Cedi gained against the US dollar in December 2022, its previous rapid and sharp fall may have already pushed many more households into poverty and reduced the purchasing power of all Ghanaians due to inflated prices. The urgent need for building the climate resilience of vulnerable, most especially their farming systems, is critical. As noted earlier, improving soil fertility through use of cover crops and green manures secures crop yields even during drought years, while other agroecology techniques also support farmers' climate resilience.

While Ghana is experiencing increasingly unreliable rainfall and annual floods that threaten lives and damage crops, homes, biodiversity, and the environment, the risk of coastal flooding and erosion is also increasing due to sea level rise. According to the World Bank report, Ghana is the third most exposed country in Sub-Saharan Africa to a

10-year coastal flood event after Nigeria and South Africa.

With 5.5 million people living within a kilometre of the shoreline, and Ghana's coast eroding at average 4 to 12 meters a year, and at 20 meters downstream of port infrastructure (World Bank Group (2022) Ghana Country Climate and Development Report), it is good that one of the focus areas for Ghana's infrastructure sector is coastal and marine erosion. The World Bank report recommends developing a blue economy framework, and adopting an integrated coastal zone management (ICZM) approach with improved spatial planning and enforcement capacities for protecting and managing coastal ecosystems. Further to this advice, Ghana government must work with coastal communities to protect the remaining mangrove forests, replant those that are lost, and manage all sustainably. Mangroves can be cut in a way that enables them to grow back. They help protect coastal communities from storms, and provide a protective nursery full of food for juvenile fish, supporting Ghana's fisheries and fishing communities.



They are also important in climate mitigation. Mangrove forests store 3-4 times more carbon than other forests. They sequester and store carbon during their growing period by an estimated 50 to 220 metric tons per acre. For the whole world, mangroves are estimated to sequester more than 24 million metric tons of carbon per year (Twilley R, Rovai, A. (2019) Why Protecting ‘blue carbon’ storage is crucial to fighting climate change. Greenbiz).

To contribute to climate change resilience and mitigation, we recommend the following:

- Support small scale farmers with training in agroecology for climate resilience building
- Establish systems to ensure access to climate and weather information for rural communities
- Support communities to initiate green development activities for sustainable production and marketing of green products and services to diversify livelihoods and incomes, and strengthen local economies (e.g. NTFP collection and processing, non-wood charcoal briquette manufacturing, compost making, natural pesticide preparation (e.g. neem), fuel-efficient cook stove production, tree nurseries, recycling and repurposing activities, dry season vegetable gardening).
- Integrate fruit and nut tree planting within communities and urban areas for healthy food in the Green Ghana Day activities
- Encourage and support rainwater harvesting
- Prioritise nature-based solutions to address societal and climate change challenges over infrastructure solutions
- Replant all lost mangroves and build communities’ capacity for their sustainable use and management.
- Assess all planned projects for their climate change impacts, mitigation, and resilience building
- Prepare technical guidance for climate proofing all infrastructure and other development projects for sharing with local government
- Climate proof all projects by ensuring they can withstand impacts of floods, sea level rise, drought, storms, and increased temperatures.
- Mainstream climate change into all government policies, programmes, and actions.
- Ensure private sector SME operators benefit from carbon credits to incentivise their investment in carbon reduction projects with local communities. State capture of all



GREY INFRASTRUCTURE DEVELOPMENT



The budget includes interventions in the infrastructure sector to stimulate development of quality, reliable, sustainable, and resilient infrastructure for broad economic development and improved livelihoods and wellbeing of Ghana's citizens. Some focal areas include water resource management, management of protected areas, coastal and marine erosion, transport infrastructure, drainage and flood control, and disaster management. To address these identified infrastructure needs, government and its construction partners should follow the global push to foster green cities. This can be promoted by ensuring developments are environmentally friendly and enhance ecosystem services by enabling co-habitation between people and nature.

Examples include greening the roads and highways, nature-based drainage systems, and protecting/establishing green spaces within towns and cities. However, as 2022 witnessed with the degazetting of part of the Achimota Forest Reserve, government seems little interested in green cities. Even though Ghana has a committee to promote tree planting in urban areas and along roadsides, it is still cutting down decades old trees instead of looking at how to avoid their destruction. Besides the value to biodiversity of urban trees, they also offer shade to people working or walking beside these busy hot roads. As the World Bank report states, Ghana's cities are getting hotter: "Increasing surface temperatures and loss of vegetation in urbanizing areas have also resulted in urban heat island effects". Large ancient trees have recently been cut down around the UPSA for road expansion. Unfortunately, road widening does not overcome congestion. It just moves the traffic bottleneck to a different location. Addressing congestion requires reliable, regular, safe, healthy, and sustainable public transport systems and safe roads and paths for pedestrians and cyclists.



Aerial view of parts of the Kpeshie Lagoon. Credit-Kwame Kwegyir-Addo

The World Bank report for Ghana advises that implementing climate-informed, integrated urban plans across Ghana should involve a wide range of short- and longer-term priority investments, including:

- Incorporating city-specific climate risk analyses and data into urban infrastructure planning and building codes
- Ensuring new buildings are resilient and green
- Preparing urban plans, mainstreaming climate change, and assuring their enforcement
- Promoting nature based solutions such as multifunctional urban green spaces.
- Enhancing climate-resilient water supply and sanitation services and infrastructure
- Expanding green buildings for new construction and retrofitting, including in informal areas
- Exploiting digital technologies for smart city development
- Enhancing the quality of public transport services and systems through:
 - Improving public transport fleet quality, and
 - Providing high-quality walking and biking infrastructure to improve safety for pedestrians and cyclists, promote inclusion, and make walking and cycling safer choices.



From left to right: Jubilee House and the Kwame Nkrumah Memorial Park

While recognising that some of the urban climate resilience needs will have to be fulfilled by grey infrastructure such as seawalls and bridges, it also notes “the use of NbS [nature based solutions] will be key to improving the livability of Ghana’s cities and their attractiveness for business”. Accra, for instance, has very few places to sit and enjoy nature and the outdoors. Most of it is concreted, tarred, paved, built on, stripped of greenery, or otherwise void of anything natural. Even new housing estates are void of green except for some grass and an occasional palm tree. Meanwhile nature and green spaces are also critical ingredients for the mental health of many people.

PLASTICS



Plastic waste remains a massive problem in Ghana. It is littered everywhere without any concern for its impacts. It is being washed out to sea and killing marine life. It is eaten by wild and domesticated animals, and can be fatal for both. It is now confirmed that we humans are eating microplastics in our food, estimated at between 39,000 and 52,000 microplastic particles a year, increased to 74,000 when inhaled plastics are also included. Ghana is no different.

Citing statistics from the Ghana Plastics Manufacturers Association, the Minister for Environment, Science, Technology and Innovation in December 2022 stated that 9% of the 840,000 tonnes of plastic waste generated [annually] in Ghana ends up in the ocean, and about 9.5% is collected for recycling. Recycling rates of some plastics are high: flexibles (pure water sachets) at 73% and high density polyethylene (rigid/furniture) at 79%, but polyethylene terephthalate (PET) at only 10.3%. PET is the plastic used for water bottles and some other drinks, so recycling rates can and must be improved. The plastic carrier bags and low micron bags (such as the thin bags used for takeaway food and the widely used black and

coloured carrier bags) have zero recycling rates due to their low quality.

The Ministry of Environment, Science, Technology and Innovation has developed a framework for 'Circular Economy in Plastics Management' but the budget does not give any details. As this is a circular economy programme, it cannot address the problem of the thin single use carrier bags and low micron bags (clear, black, coloured). The quality is too low so they cannot be recycled. They must be banned again. Plastics that can be remade into versions of themselves – such as PET bottles – should be recycled by the companies producing and using them to ensure the polluter pays. Bel Aqua is already doing this in Ghana. Since mid-2021, Bel Aqua's mineral water bottles contain 10% recycled plastic with the goal of increasing this to 50% by the end of 2022, leading the way in proving what can be done.

The budget statement also identifies a plan for plastic waste management to be piloted for 6 months in Accra, but again there are no further details, and also there is no mention of the Ghana National Plastic Action Partnership launched in 2019.

With these concerns about plastics in mind, below are some recommendations for consideration:

- Government MUST BAN single use plastics again, at least those below 20 microns to reinstate the 2015 ban. The worst plastic products are the thin clear plastic bags used to wrap food and dry products, and the black and coloured plastic bags used to wrap and rewrap everything from takeaway food to any items sold in shops and markets. Plastic cutlery for takeaway food are also very common and cannot be recycled. There are already wooden and bamboo alternatives available that should be encouraged. Banning the single use plastics will stimulate innovation and use of alternatives. Also ban takeaway polystyrene food packs, which also cannot be recycled.
- Companies using or making plastic packaging must be taxed: 1. for any new plastics they use; and 2. for the pollution they cause. This will encourage companies to take back and recycle the waste they sell to consumers.
- Incentivise PET recycling. The current 10.3% is too low for a material that is very recyclable
- Ban non-recyclable supermarket carrier bags and implement a charge on all other plastic carrier bags in supermarkets. This can then contribute to the plastic waste levy.
- Raise awareness among consumers, marketers, shopkeepers, food vendors etc about the terrible impacts of plastic waste, and encourage people to take a reusable bag to the shops and markets, and a reusable bowl to buy food. It is so easy to do.
- For all waste sectors, the World Bank recommends:
 - Promote the transition to a circular economy for integrated waste management
 - Improve the treatment and productive waste of liquid solid waste
 - Focus on eliminating burning, open dumping, and uncontrolled disposal of solid waste.



FUNDING FOR SPECIFIC PROJECTS AND PROGRAMMES

The table below lists programmes related to the sectors above and their annual budgets for 2022. The budget for the cathedral is included for comparison because it was mentioned in the text. The key for the colours is:

Green is an increase in budget for a critical natural resource sector

Red is a decrease in budget for a critical natural resource sector.

Programme	2023 budget predicted in the 2022 budget	2023 budget
Planting for Food and Jobs (PFJ)	625.7m	660.5m
Irrigation Development	0	200m
Tree Crops Development Authority	23.7m	750,000
National Afforestation Programme	53.5m	100m
Operation Vanguard (Anti-galamsey operations and REGSEC)	24.2m	3.2m
GIADEC	36.9m	9m
Water and Sanitation Initiative	117.3m	74.48m
Green Ghana Project	11.5m	2.5m
Plastic Waste Recycling Fund	4.2m	2.4m
Fisheries (no specific amount identified for IUU. All is identified for Headquarters and a college)	85.6m	51.3m
Renewable Energy	0	0
Nuclear Energy (Min of Energy)	0	2m
National Cathedral	0	80m (rejected)
No specific budget identified for: <ul style="list-style-type: none"> • Mangrove protection and replanting • Watershed and water body protection • Flood control / DRR • Illegal, Unreported and Unregulated (IUU) fishing 	0	0

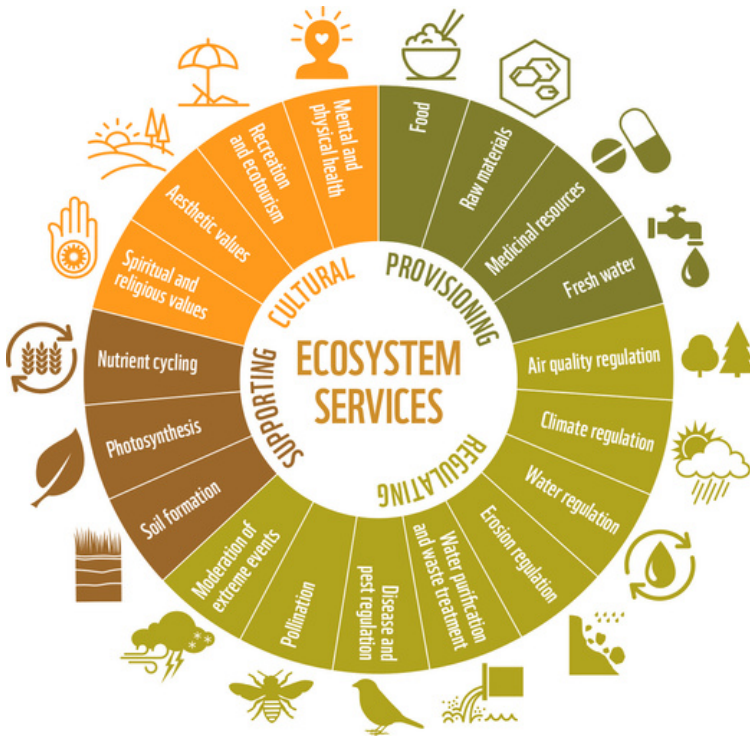
CONCLUSION

The world's finance sector has suddenly woken up to the fact that the world's economy needs biodiversity. The World Economic Forum estimated that USD 44 trillion – more than half the world's GDP in 2020 – is generated by industries dependent on nature, with construction, agriculture, and food in the lead. The World Bank estimates that collapse in certain ecosystem services such as pollination, marine fisheries, and timber from natural forests could result in decline of global GDP by USD 2.7 trillion by 2030. Relative impacts will be most pronounced in low- and lower-middle income countries where drops in GDP could be over 10%. Overdependence on natural resource extraction for development is contributing to this. The newfound interest from the financial community is giving some hope, however, especially now when protection of natural systems faces an estimated finance gap of USD 700 billion a year.

Ghana is no different. Damage to biodiversity and ecosystem services that the country's critical sectors depend on is undermining their future sustainability. With agriculture and food being one of the most dependent sectors, Ghana's food security will be threatened. Nature must be central to decision-making on projects and programmes to ensure they are 'win-win' for both biodiversity and development. Ghana should also look to the many green and innovative development options being developed. Today's youth are brimming with fabulous ideas to address Ghana's challenges. Give them the floor so they can show you what they have. The future is for them anyway, so they must be a firm part of designing it.



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