RESEARCH NOTES AND STATISTICS

Climate Change Policy in Agriculture, Forestry, and Other Land Use: An Argument for Equity

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INTRODUCTION

The 27th Conference of Parties (COP27) of the United Nations Framework Convention on Climate Change (UNFCCC) took place in Sharm el-Sheikh, Egypt, in November 2022 against the backdrop of rising food, energy, and debt crises in many developing economies. It was thus significant that the cover decision of COP27, the Sharm el-Sheikh Implementation Plan, recognised "the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change" (UNFCCC 2022b). Regions with substantial development constraints, limited access to basic services, and a high level of dependence on climate-sensitive livelihoods (for example, smallholder farming and pastoralism) are highly vulnerable to climate hazards (IPCC 2022a). The agricultural sector in developing countries is one of the sectors most adversely affected by climate variability, and, in the future, by the ongoing impact of anthropogenic global warming.

However, there is increasing pressure on developing countries to undertake mitigation measures in the agriculture, forestry, and other land use (AFOLU) sector. AFOLU mitigation or land-based climate change mitigation refers to a range of land or demand management practices that can reduce greenhouse gas emissions or enhance carbon sequestration in land, including forests, wetlands, cropland, pasture, and grasslands. The AFOLU sector, on average, accounted for 13-21 per cent of

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global total anthropogenic greenhouse gas (GHG) emissions between 2010 and 2019. At the same time, managed and natural terrestrial ecosystems were a carbon sink, absorbing around one-third of anthropogenic carbon dioxide (CO2) emissions. In general, land constituted a net sink for the period 2010–2019 (Nabuurs *et al.* 2022).

In this note, we highlight some concerns around the AFOLU sector, arguing that recent developments undermine human well-being and development in the Global South by undermining the two foundational principles of the UNFCCC, that the Parties should protect the climate system "on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities (CBDR-RC) (UNFCCC 1992)."

Alongside these two principles, the climate Convention further recognises that developed countries must take the lead in mitigation and adaptation and provide means of implementation, including financial support and technological transfer for mitigation and adaptation, to developing countries. This is because of their greater responsibility for past and current emissions and because they have significantly more resources than less-developed countries to address the problem and adapt to climate change. Developing countries not only lack adequate resources to deal with the harmful effects of climate change but are also more vulnerable to its predicted adverse effects.

The first section of this note argues that while the use of the AFOLU sector for mitigation has always been promoted by developed countries in international climate policy, they are now being promoted on an unprecedented scale, employing concepts such as "nature-based solutions." As the AFOLU sector in developing countries is dominated by small-holder subsistence and marginal farmers, this means, in effect, shifting the burden of mitigation on those least responsible for climate change but most vulnerable to its impact. The second section of the note argues that such inequitable burden sharing is being promoted and justified using least-cost modelled mitigation pathways. The third section argues that developing countries have pushed back against this trend, as witnessed in negotiations in COP27 over the way forward on the UNFCCC agenda in agriculture (known as the Koronivia Joint Work on Agriculture, or KJWA). For many low and middle-income countries, regardless of the estimated mitigation potential from AFOLU measures, enhancing food security, agricultural productivity, and resilience to climate variability and change will remain the priority. The fourth section argues that disregarding the ongoing debate and negotiations on mitigation burden sharing, multilateral development banks and organisations have already increased climate finance funding to the AFOLU sector for mitigation while the adaptation funding for the sector has stayed stagnant. Moreover, the mitigation funding for the energy sector has declined, thereby not only generating trade-offs with food security and livelihoods but also with clean energy transition in developing countries.

Shifting the Mitigation Burden on the Global South

The latest IPCC reports confirm that there is a linear relationship between the amount of emissions and temperature rise with every 1000 GtCO2 of Green House Gas (GHG) emissions leading to a global mean temperature rise by likely 0.27–0.63°C (IPCC 2021). This implies that, to limit the temperature rise to a specific level, the world only has a finite carbon budget. For a 50 per cent probability of limiting temperature rise to 1.5°C, the world has a global carbon budget of 2900 GtCO2 (IPCC 2021). But, four-fifths of that carbon budget was exhausted between 1850 and 2019. So, very little carbon space, of around 510 GtCO2 is left for the future. Annual emissions from fossil fuels and industry during 2018-2019 were around 36.43 GtCO2 (Friedlingstein et al. 2022). If the world continues to emit at this rate, the 1.5°C target will be surpassed in roughly another 10 to 15 years. Developed countries are responsible for appropriating a disproportionate share of the global carbon budget (Kanitkar and Jayaraman 2019). Between 1850 and 2019, developed countries contributed 57 per cent to cumulative emissions (excluding Land Use, Land-Use Change and Forestry or LULUCF emission), whereas the contribution of Southern Asia and Africa were only four and three per cent respectively. As of 2019, developed countries made up 15 per cent of the world population but contributed 27 per cent of the global GHG emissions (excluding LULUCF emission). In contrast, Southern Asia and Africa made up 24 per cent and 17 per cent of the global population, yet contributed only nine and six per cent of global GHG emissions respectively (Dhakal et al. 2022).

Given the relevance of the carbon budget, developed countries that are still reluctant to make deep emission cuts now advocate for land-based mitigation measures on an unprecedented scale to achieve climate goals. The current push for land-based mitigation is a continuation of the strategy of developed countries to shift the mitigation burden onto the Global South. Right from the negotiations around the Kyoto Protocol (1997), several developed countries have consistently endeavoured, relatively successfully, to incorporate land-based sinks and negative emissions in international climate policy discussions, to provide flexibility and a cheap mitigation alternative to deep decarbonisation of their economies (Carton et al. 2020). The most active proponents of both natural carbon removal instruments such as reducing emissions from deforestation and forest degradation (REDD+) in developing countries and Carbon Capture and Storage (CCS) technologies are industrialised countries including Canada, Australia, Norway, Germany, and the United States (Jung 2004; Røttereng 2018a). According to a study of Norway, political support for CCS and REDD+ gained traction precisely because it enabled the government to reconcile its domestic ambition for ongoing oil and gas extraction with international climate obligations (Røttereng 2018b).

A range of concepts are being introduced to push for land-based mitigation with a greatly expanded focus on agriculture. Concepts such as "nature-based solutions" (NbS) and "climate-smart agriculture" have gained significant political traction in

the last decade. In the context of AFOLU, NbS refers to land-based measures with mitigation and/or adaptation benefits along with benefits for biodiversity and human well-being. There is overlap between NbS and climate-smart agriculture as both promote a similar set of practices such as agroforestry, agroecology, no-till agriculture, regenerative farming, and conservation agriculture. These practices, it is claimed, provide cost-effective measures that deliver a "triple win" in the form of enhanced agricultural productivity, improved resilience to climate shocks and reduced emissions in the form of avoided use of synthetic inputs or greater carbon sequestration. These policies are wrought with multiple concerns ranging from developed countries using it as a strategy to delay fossil fuel emission cuts, their declining effectiveness as climate change progresses, gaps in evidence of their efficacy and trade-offs with poverty and development outcomes (Carton *et al.* 2020; Parmesan *et al.* 2022; Reise *et al.* 2022). We examine these concerns one by one.

Climate change mitigation requires fossil fuels to be phased out rapidly, and AFOLU options cannot compensate for emission reductions in other sectors (IPCC 2022a). There is widespread concern that NbS and broadly land-based mitigation is being used by developed countries to delay or substitute emission reduction from fossil fuels by gambling on large-scale sequestration by forests and other ecosystems of the Global South (Anderson and Peters 2016; Carton et al. 2020). Further, there are serious concerns that AFOLU mitigation is being used to greenwash fossil fuel emissions in developed countries by using low-cost AFOLU offsets from the Global South. Moreover, the history of the limited effectiveness of REDD+ in reducing emissions from deforestation, forest degradation and forest conservation in developing countries is further cause for concern (Reinecke et al. 2020). Likewise, the effectiveness of NbS practices to sequester carbon is under debate (Powlson et al. 2014, 2016). The ability of ecosystems to sequester carbon is itself impacted by climate change (Nabuurs et al. 2022). The carbon sinks may be reversed through biotic and abiotic factors, such as droughts, wildfires or land clearance putting carbon dioxide again in the atmosphere. As a consequence, a tonne of CO2 removal, achieved through land-based measures, cannot be considered equivalent to a tonne of CO2 of fossil fuel avoided with a much lower risk of non-permanence (Reise et al. 2022). Therefore, there are big risks in relying heavily on land-based mitigation measures to meet climate goals, and if they fail to deliver on the scale envisaged, the adverse impact will be borne disproportionately by the Global South (Anderson and Peters 2016).

Disturbingly, the possible barriers, trade-offs, and risks involved in the large-scale deployment of NbS in a developing country context are frequently overlooked or simplistically portrayed as manageable (Carton *et al.* 2020). There is a lack of robust, site-specific investigations of the effectiveness of NbS interventions compared to other alternative approaches and wider appraisals accounting for broader social and ecological outcomes (Parmesan *et al.* 2022). The recommended practices are often highly location-specific, knowledge-intensive, and may involve increased labour and

other costs, reduce yields, and not provide immediate benefits (Pittelkow *et al.* 2015; Powlson *et al.* 2014, 2016; Scholes, Palm, and Hickman 2014; Seufert, Ramankutty, and Foley 2012). These pose significant obstacles to adoption by small-holder and marginal farmers in developing countries most of whom already have low yields, insufficient resources, and are food insecure (IPCC 2022a). Therefore, it is not only risky but also unjust to rely upon the immediate widespread adoption of land-based mitigation measures in developing countries as a major strategy for climate change mitigation.

The hypocrisy of the Global North in advocating land-based mitigation and vociferously calling for the protection and conservation of the Amazon forests, the Congo basin and Indonesian rainforests for global, environmental, and climate change benefits is striking. Not only does the industrialised North bear historical responsibility for decimating its domestic ecosystems and biodiversity over the last centuries of industrial development, but this debate is also taking place with little recognition of their historical role in the destruction of the environment and decimation of the indigenous population through settler colonialism (USA, Canada, and Australia being the leading examples), in the larger context of colonialism and imperialist domination of the countries of the Global South.

AFOLU IN MODELLED PATHWAYS, THEIR MITIGATION POTENTIAL, AND EQUITY AND CBDR-RC

The carbon budget remaining for limiting temperature rise to 1.5°C is small and, at the current rate of emissions, may be exhausted in the next 10 to 15 years. However, modelled mitigation pathways assessed by the IPCC state that this goal is achievable in the 21st century and developed countries, especially the European Union, therefore continue to push for more ambition in reducing emissions in COP negotiations (Liboreiro 2022). This narrative omits the fact that all the modelled mitigation pathways assessed by the IPCC for staying within the limits of the remaining budget for 1.5°C or 2°C, depend upon the rapid and large-scale deployment of AFOLU measures in the Global South (Nabuurs et al. 2022). Estimates of the modelled mitigation pathways are being used to justify and provide a veneer of scientific validity for transferring the burden of mitigation on to the Global South. These modelled mitigation pathways project energy inequality between the Global North and South far into the future (Kanitkar, Mythri, and Jayaraman 2022; Hickel and Slamersak 2022). The higher per capita energy consumption in the Global North in such models is achieved to a large extent through land-based mitigation measures in the Global South. In most models, more than 80 per cent of AFOLU-related mitigation is projected to take place in developing countries (Kanitkar, Mythri, and Jayaraman 2022). This is chiefly because modelled mitigation pathways do not make "assumptions about global equity, environmental justice or intra-regional income distribution" (IPCC 2022b), but rather explore cost-effective pathways to limit temperature rise, thereby allocating emission reductions wherever it is cheaper, even at the cost of lives and livelihoods in the Global South.

In most global modelled pathways assessed by the IPCC that limit warming to $2^{\circ}C$ (>67 per cent) or lower by 2100, the AFOLU sector, via reforestation and reduced deforestation, and the energy supply sector reach net zero CO2 emissions earlier than the buildings, industry, and transport sectors (IPCC 2022b). Further, these models indicate that AFOLU measures can provide 20 to 30 per cent (interquartile range) of the global mitigation needed for a 1.5°C or 2°C pathway towards 2050 (Griscom *et al.* 2017; Nabuurs *et al.* 2022; Roe *et al.* 2021). However, it is possible to model other options that allow different sectors and regions to share the mitigation burden in a fair and equitable manner. Therefore, the widely disseminated statements by media and donor organisations (see, for example, CCAFS-CGIAR 2016; Conservation International 2022; Lynch 2020; WWF 2021; Ritchie 2021; UNDP 2021; UNEP 2020; Wollenberg *et al.* 2016; Clark *et al.* 2020) that the world cannot meet 1.5°C targets without rapid deployment of AFOLU measures are not statements of fact but an artefact of modelling assumptions and normative choices made by modellers, most of whom are based in developed countries.

To a large extent, GHG emission reductions in these modelled pathways depend on the assumption of a globally coordinated GHG emission pricing scheme across different sectors including energy, industry, transport, buildings, and AFOLU sectors. Increasing the stringency of the global climate stabilisation goal from 2°C to 1.5°C involves a substantial increase in the global carbon price, which can go up to USD 1000 tCO2-eq-1 and even beyond in some models (Humpenöder et al. 2022; Leahy, Clark, and Reisinger 2020). In practice, no developed nation subjects its agricultural emissions to any carbon price whatsoever. Agricultural emissions are excluded from the economy-wide emission trading schemes of all developed countries (OECD 2022a). The European Union and New Zealand's emission trading scheme and regional and state-level emission trading schemes in the US do not cover agricultural emissions. Canada and Norway have introduced taxes on emissions but exempt the agricultural sector (OECD 2022a). Industrial agriculture in developed countries is energy-intensive with high yields and high levels of mechanisation, input use, and irrigation as opposed to typically low yields, low-input use, and lowlevels of mechanisation, rainfed, and subsistence agriculture in developing countries. If developed countries are yet to take the lead in subjecting agriculture emissions to a carbon price due to considerations of production, rural incomes, and trade competitiveness, it is inequitable to expect developing economies, where agriculture plays a critical role in food security, rural development, and poverty alleviation, to do so anywhere in the near future.

To address the high carbon prices in modelled pathways, studies have tried to come up with a more "realistic" picture of the mitigation potential from the AFOLU sector by estimating the "cost-effective" economic mitigation potential as opposed to technical

mitigation potential (Frank et al. 2021; Roe et al. 2019, 2021). The idea is that "economic potential estimates, which reflect a public willingness to pay, may be more relevant for policy-making compared with technical potentials which reflect a theoretical maximum that may not be feasible or sustainable" (Nabuurs et al. 2022). The estimates of cost-effective mitigation potential are typically limited to those measures with carbon prices up to USD 100 tCO2-eq-1. Imposing this upper limit cuts down the mitigation potential to half of the technical potential (IPCC 2022b). According to estimates of mitigation potential, about 80 per cent of the cost-effective potential in AFOLU is located in developing countries, with protection, restoration, and management of forests and other ecosystems offering the highest potential, followed by agriculture (including soil carbon management, livestock, and nutrient management) and demand side measures (including dietary shifts, reducing food waste) (Roe et al. 2021). However, this economic potential does not account for the infrastructural, socio-economic, financial, technical, and institutional barriers in low and middle-income countries to implementing AFOLU mitigation measures and its trade-offs with other SDGs, especially food security, rural employment, and incomes (Nabuurs et al. 2022).

KORONIVIA JOINT WORK ON AGRICULTURE: ADAPTATION WILL REMAIN A PRIORITY FOR DEVELOPING COUNTRIES

Developed countries have met with resistance from developing countries when it comes to land-based mitigation. One such forum where developing countries pushed back against land-based mitigation albeit with mixed results and with some countries taking a stronger stance than others was the Koronivia Joint Work on Agriculture (KJWA) under the UNFCCC. Agriculture and food security are discussed by the COPs under the KJWA which was established at COP23, in Bonn, in 2017. Differences among Parties on which issues need to be prioritised have characterised negotiations under the KJWA since the very beginning. The COP23 decision establishing the KJWA avoided any reference to the differentiation between Parties and in the follow-up negotiations developing countries have strongly argued that if the way forward in addressing agriculture and climate change was to include all countries without differentiation, then discussions should only focus on adaptation (Urrutia and Siemons 2020). Low and middle incomes countries of Africa, Latin America, and Asia have emphasised in their KJWA submissions and in the negotiations, that, given the critical role played by the sector in their economies, their priorities are adaptation, building resilience to climate change and climate variability, and food security. At COP27, where Parties met to decide the way forward and the implementation plan for KJWA, developing countries again resisted attempts by developed countries to pass the mitigation burden in agriculture onto them calling it unfair that smallholder farmers should bear the burden of mitigation (IISD 2022). India, expressed concern that "developed countries are distracting attention from their excessive GHG emissions by emphasising a reduction in agriculture emissions which are 'survival emissions' and not 'luxury emissions'" and are blocking a pro-poor pro-farmer decision by insisting on expanding the scope of mitigation to agriculture, "compromising the very foundation of food security" (PTI 2022).

Notwithstanding such objections, COP27 established for the first time a separate track under the UNFCCC for climate action and decisions in a particular sector in the form of the four-year "Sharm el-Sheikh Joint Work on Implementation of Climate Action on Agriculture and Food Security," including implementation of the KJWA outcomes. No such track exists for climate action in, for example, the energy supply or industry sector, which in 2019 were responsible for 34 and 24 per cent of total net anthropogenic GHG emissions respectively (IPCC 2022b). While reference to equity and CBDR-RC is still missing, due to the pushback from developed countries, the decision recognised that "adaptation is a priority for vulnerable groups, including women, indigenous peoples, and small-scale farmers" (UNFCCC 2022a). Further, addressing issues related to agriculture and sustainable land management will be "context-specific" and "take into consideration regional, national, and local circumstances." Adding these caveats was critical, as the sector is highly vulnerable to climate variability and climate change, adding to the development deficits and structural challenges already faced by small holders and marginal farmers in developing countries. Therefore, depending on national context, doubling agricultural productivity, farmer incomes, and adaptation to climate change can be prioritised by developing countries over mitigation in agriculture, though the pressure of developed countries to the contrary will no doubt continue.

CHANGING LANDSCAPE OF AFOLU CLIMATE FINANCE

While negotiations are still alive on the role of and burden sharing related to land-based mitigation measures, the estimates of their mitigation potential from models are being disseminated widely, and have gained traction among multilateral climate funds, development banks, and organisations (see, for example, IFAD 2022a; IUCN 2018; Miralles-Wilhelm 2021; The Nature Conservancy n.d.; World Bank 2022). Land-based mitigation is now high on the agenda of international public climate finance. Some multilateral organisations have even called for aligning AFOLU sector finance to pursue the Paris Agreement's 1.5°C global warming limit (FAO 2022b; IFAD 2022a). The sectoral guidance and strategy documents of multilateral climate funds and multilateral organisations are now framed around nature-based solutions, low-emission resilient agricultural systems, and ecosystem and forestry measures that integrate mitigation, adaptation, and biodiversity concerns (FAO 2022a, 2022b; GCF 2021, 2022a, 2022b; IFAD 2022b, 2022a; World Bank 2022). At present, developed countries have not even met the goal of providing USD 100 billion per year in climate finance to developing countries by 2020, committed to way back in 2010. The actual financial needs of developing countries are much higher. Financial constraints impose a crucial soft limit to adaptation across all sectors and regions. The current global flows for adaptation (public and private sources) are inadequate and hinder the implementation of adaptation options, especially in developing countries (IPCC 2022a). It is estimated that the annual adaptation needs are on the higher side of the range of USD 160–340 billion by 2030, and USD 315–565 billion by 2050 (UNEP 2022). The AFOLU sector accounts for a significant share of this projected figure. Based on current estimates, the adaptation needs of developing countries are currently between five and ten times higher than international adaptation finance flows, and the adaptation finance gap continues to widen (UNEP 2022).

Despite the substantial and urgent need for adaptation finance for the AFOLU sector, it is mitigation finance to the sector which has shown the most rapid increase in recent years, driven by increased allocation by multilateral organisations (OECD 2022b). Between 2016-2020, according to the Organisation for Economic Cooperation and Development (OECD), mitigation finance from developed to developing countries targeting the energy sector decreased, both in relative (51 per cent to 44 per cent) and in absolute terms (USD 0.8 billion lower in 2020 than in 2016). By contrast, mitigation finance steadily increased in agriculture, forestry, and fishing. Driven by multilateral public climate finance, the share of mitigation finance for agriculture, forestry, and fishing almost quadrupled from 1.8 per cent in 2016 to seven per cent in 2020 (i.e. an increase of USD 2.5 billion) (OECD 2022b). In the same period (2016-2020), the agriculture, forestry, and fishing sector received 19 per cent of total adaptation finance, and the share did not change much from year to year. The Food and Agriculture Organization (FAO) reports that the year 2019 marked the highest allocations to forestry in the last two decades 2000-2019, reaching USD 1.8 billion, with one-third of it allocated to Asia (Buto et al. 2021). Forestry finance was mainly for mitigation and the largest providers were the multilateral development banks. Though the agriculture sector continued to receive the highest allocation among all AFOLU subsectors, between 2017-2019, it saw a decline in funding.

Given the push by multilateral organisations and development banks, the share of mitigation finance to the sector may be expected to rise even further in the future at the cost of adaptation finance and mitigation finance for the energy sector. This has worrying implications for developing countries. First, increasing financial flows to land-based mitigation measures at the cost of energy, compromises clean energy transitions in developing countries. Secondly, many measures in the agriculture sector which may be important from the point of view of developing countries for improving production, poverty eradication, and adaptation may not have mitigation co-benefits. Improving yields through providing access to irrigation and agricultural inputs such as fertilizers, and building infrastructure, including cold storage chains for reducing post-harvest loss, are some measures that developing countries consider important for the transformation of the sector and for adapting to climate change (Mugisha 2022; Nordhaus, Ramachandran, and Brown 2022; Shah 2022). These measures are expensive and need finance but are energy intensive. To illustrate, many parts of Sub-Saharan Africa have low crop yields and low fertilizer

input use is one important reason. High fertilizer prices on account of low domestic production and high import costs from Europe are the main reasons for low fertilizer use in Sub-Saharan Africa. Integrated plant nutrient management in this region would require increasing the extent of fertilizers and manures applied to soils, and reducing the cost of fertilizer by significantly increasing production within the region. Further, dependence on rainfed agriculture in large parts of developing countries poses additional threats to rural livelihoods. Improving access to properly managed irrigation can be effective in reducing drought risk and provide livelihood benefits (IPCC 2022a). However, the shift in focus towards measures for mitigation or those with mitigation co-benefits means that such effective and proven options for agricultural development may fail to secure funding (Guarascio 2022).

Conclusion

According to the United Nations Framework Convention on Climate Change (UNFCCC), stabilisation of greenhouse gas (GHG) concentration in the atmosphere at a level that would prevent dangerous disruptions to the climate system is to be achieved.

Within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Thus, ecosystems are conceptualised in the Convention as sites of adaptation and not as sinks of carbon to substitute ambitious mitigation action. The failure of developed nations to undertake deep and ambitious emissions reductions over the last three decades has resulted in the goal of 1.5°C being almost unattainable. Confronted with the scientific reality of the diminishing carbon budget and unable to sufficiently accelerate their domestic climate action to meet the 1.5°C target, developed countries are now demanding that the Global South use its ecosystems as sites of mitigation instead of focusing on how these diverse biomes can adapt to the impacts of climate change *while also meeting their socio-economic development goals.* Mitigation pathway models with no assumption of equity provide a sense of scientific legitimacy to this shifting of burden.

Adaptation and socio-economic development remain the central priority of developing countries. The push for mitigation is sought to be made palatable by introducing concepts such as nature-based solutions (NbS) which suggest that there is no trade-off between mitigation and human well-being. The current strategy is not only inequitable but also deeply counterproductive as ecosystems in the Global South are themselves vulnerable to global warming and their performance (including carbon sequestration potential) is expected to be adversely affected by rising temperatures. The strategy is also a very risky gamble with lives and livelihoods in the Global South and indeed with the world, as the combined effect of the failure of the agriculture, forestry, and other land use (AFOLU) sector to deliver mitigation on the massive scale envisaged and delayed decarbonisation of Global North will mean the world will surely see a further rise in temperature. The adverse consequences of such rising temperatures will be borne disproportionately by the Global South.

Therefore, the current shift in the global policy landscape fostered by the developed countries towards AFOLU mitigation in developing countries requires a more concerted engagement from the Global South. India has the highest number of people dependent on agriculture and allied sectors, and is well placed to take the lead in ensuring that global climate policies and targets are just and equitable. Developing countries with historically low contributions to cumulative emissions and low per-capita emissions must have room for the structural transformation of the agriculture sector to meet the food and nutrition requirements of their population, to enhance incomes, and to promote diversification of the livelihoods of millions of farmers dependent on climate-sensitive livelihoods.

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