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The EU and Climate Security: Toward Ecological Diplomacy

Olivia Lazard and Richard Youngs, editors

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INTRODUCTION

OLIVIA LAZARD AND RICHARD YOUNGS

The EU stands at a critical juncture in its commitment to energy transition and action against climate change. The European Green Deal brings together multiple strands of policy to propel European states toward a low-carbon economy. However, as the EU deepens and accelerates its internal energy transition, climate action must become a more pivotal issue for the union's external action. Europe's energy transition will have far-reaching effects, particularly for the bloc's relationship with the wider world. At the same time, the impacts of climate change on politics and interstate relations globally will present increasingly pressing challenges for the EU's security and other interests.

These observations are highly pertinent and connect to another major EU commitment: becoming a stronger geopolitical power. Linking these issues, this compilation explores how the EU could—through its external policies—be an effective geopolitical power in dealing with climate change and ecological shifts.

Extensive analytical work has accumulated on climate security and mainly makes the general case for why the EU needs to take climate factors more seriously within its foreign policies. But after more than a decade of policy efforts, the EU already has a dense network of ongoing initiatives that fall to some degree within the scope of climate security. Given this, the priority should no longer be restating the basics of why climate represents a geopolitical challenge. The EU has already moved some distance along this policy curve. Rather, it should be to assess the more precise ways in which the EU is approaching climate security.

The following six chapters here assess different elements of the climate security challenge. Through these different contributions, a core argument emerges: the EU needs a broader understanding of climate geopolitics to extend and improve its already rich array of policy initiatives in this area. It essentially needs to transition from its current conceptualization of climate security to a more ambitious notion of ecological security.

The intense focus on reducing carbon emissions has diverted attention from the wider challenges that come from ecological disruptions. The EU has added useful climate elements to its security policies, but strategists' mindsets still need to shift to recognize the need for more fundamental change. The union needs to move beyond containing climate risks to supporting far-reaching systemic change. Climate security policies must not only focus on adapting to turbulence, resource constraints, and higher levels of unpredictability but also on fostering the deeper change needed to restore ecological stability and balance at a global level. Rather than simply adding climate components to its existing foreign and security policy frameworks, the EU needs to understand how a very different set of external imperatives will flow from the far-reaching systemic change spurred by ecological stresses.

The chapters build a case for the shift in focus through two levels of analysis: one that closely assesses current EU external policy approaches and one that reveals the extent of the EU's understanding of climate geopolitics. Rather than simply assert that the EU needs to do more in the field of climate security, the authors delve into the union's evolving approaches, what the EU has achieved so far, how it has fallen short in generating a properly conceptualized approach to climate geopolitics, and what the implications will be if the limitations are not addressed.

In the first chapter, Richard Youngs examines the two core aspects of the EU's approaches to climate security policy over the last decade: its indirect, context-shaping approach and its protective-autonomy approach (that focuses on inward-looking geostrategy). This conceptual framework provides a baseline for understanding how the EU's policies have been insufficient and how they can be improved.

Olivia Lazard explains why the EU's existing policies do not address the roots of climate security issues and may even cause more climate disruption in the long term. Calling for a strategy that looks beyond a one-dimensional focus on decarbonization, she outlines the concept of an ecosocial contract that should drive the EU to move beyond climate security toward ecological diplomacy.

David Michel investigates EU responses to the conflicts and fragility that climate disruptions are increasingly exacerbating. He explains why the EU needs to develop more effective and climate-sensitive notions of resilience and conflict interventions, especially in the geographical areas that are likely to become the world's key stress points.

Andreas Goldthau charts how the EU has progressively incorporated climate factors into its external economic relations but has not done so in a way that constitutes an effective approach to geoeconomics. While the EU's regulatory toolbox is core to its international power, whether it can be used to manage the strategic impacts of climate change without significant negative side effects is unclear.

Sophia Kalantzakos observes how climate challenges have prompted the EU to start recalibrating its international partnerships. Particularly given concerns over rare earth and critical mineral supplies, she argues that the union needs to fundamentally reassess its geopolitical alliances and approaches to multilateralism as part of its ecological diplomacy.

And, finally, John Elkington and Thammy Evans contend that the EU needs to advance an ambitious model of economic regeneration that goes beyond the commitments of the European Green Deal. This model should become the foundation for designing a broader and more effective set of internal and external EU policies. In her conclusion, Heather Grabbe ties the chapters together and recommends concrete steps the EU can take toward ecological diplomacy.

The EU has achieved much through its climate policies in recent years, and there is no doubt that the challenges facing Europe are complex. The purpose of this compilation is not to criticize but rather to suggest various ways the union can move into a necessary next phase of climate security or ecological diplomacy. It aims to offer a big-picture reflection on what security means in a climate-disrupted world, as well as a practical set of guidelines for how a geopolitical EU can contribute more positively to a broader ecological security agenda.

One overarching guideline directs the EU to move beyond a reactive and piecemeal approach to climate security toward a more systemic approach to peace and geopolitics. This requires going beyond the Green Deal and the focus on decarbonization. It also requires the EU, across all areas of its internal and external action, to establish mechanisms to measure both the positive and unintended negative impacts of its policies on this wider ecological regeneration. The EU also needs to better integrate comprehensive climate and ecological factors into its external conflict, governance, and development policies. Further, it should work to ensure that international partnerships help deescalate geopolitical competition for critical rare earths and other materials rather than further fuel this growing risk to ecological stability.

As all of this suggests, the move toward a wider notion of ecological security is not simply about the EU doing slightly better in its current efforts—putting more diplomatic or financial resources into existing conceptual approaches. Many of these current approaches are not just insufficient but, in some cases, actually harmful to ecological integrity and, in turn, to the union's geopolitical interests related to security and stability. It is imperative that the EU make a qualitative change in how it seeks to articulate the relationship between the ecological crisis and its geopolitical power.

CHAPTER 1

THE EU'S INDIRECT AND DEFENSIVE APPROACH TO CLIMATE SECURITY

RICHARD YOUNGS

Over the last decade, EU policy has employed both an *indirect*, context-shaping approach to climate security, which focuses more on process than output, and a protective-autonomy approach, which focuses on multiple defensive approaches to safeguard the EU's geopolitical interests.

In putting these approaches into practice, the EU has advanced a rich profusion of climate security initiatives; diplomats certainly do not need to be told that "climate policy is foreign policy," as they have been working on this assumption for more than a decade. Moreover, the EU's approach has positioned the bloc well to play a constructive role in climate geopolitics. However, the union's overall approach to climate security has been relatively narrow. It has built select climate elements into its existing security strategies rather than rethinking what security itself entails in a world challenged by widespread ecological disruptions.

THE EVOLUTION OF EU CLIMATE SECURITY POLICY

The European Commission was one of the first bodies worldwide to identify climate change as a security issue. In 2008, it published an influential paper framing climate change as a "threat multiplier" that needed to be placed at the heart of EU security policy.[1] This new framing then spurred a series of climate policy developments and initiatives. For example, EU institutions began running awareness-raising sessions on climate security for their diplomats.[2] In July 2011, the EU launched a "climate diplomacy" initiative to begin engaging—in a more tangible and systematic fashion—on the foreign policy dimensions of climate change.[3]

In 2013, the Foreign Affairs Council adopted conclusions that promised a mainstreaming of climate security into all external policies and dialogues.[4] Over the 2010s, most EU member states introduced their own climate security strategies and oversaw a similar range of events, research, scenario planning, and regional dialogues. Denmark, Germany, Sweden, and the United Kingdom developed particularly notable national strategies that involved a wider range of actors from military planners to development aid practitioners.[5]

In February 2018, the European Council committed to doing more on all aspects of climate security, promising to "further mainstream the nexus between climate change and security in policy dialogue, conflict prevention, development and humanitarian action and disaster risk strategies."[6] In June 2018, on the tenth anniversary of the 2008 "threat multiplier" paper, the EU promised to take more of a security-led role in climate issues.[7] Council conclusions in 2019 reiterated the commitment to tackling climate change as an "existential" issue of international security.[8]

The commission's European Green Deal, published in December 2019, wrapped these various strands of external policy into a more concerted strategy. It proposed an upgraded "green deal diplomacy" across the world and promised to build "green alliances" through its foreign policy instruments.[9] European leaders insisted that these commitments represented a major upgrade to the EU's international climate action. In early 2020, another set of council conclusions on climate diplomacy reiterated the commitment to take climate factors into account in wider foreign policy engagements;[10] and in late 2020, the Climate Change and Defence Roadmap promised to incorporate climate factors fully into the Common Security and Defence Policy (CSDP).[11]

The above examples are just a selection of the key policy developments from the EU's increasingly dense network of climate security commitments and initiatives; many others could be cited.

AN INDIRECT APPROACH TO CLIMATE SECURITY

In taking the above commitments forward, the EU has in practice developed what might be termed an *indirect* climate security policy. It has worked increasingly hard to shape preparatory principles and the contextual factors around climate geopolitics, while undertaking relatively little direct action of a security or geopolitical nature.

Developing preparatory principles. The bulk of EU efforts centers on awareness-raising, generic dialogue, and data gathering to help reveal the important political and strategic effects of climate change. As such, the EU appears to be focused on preparing principles for climate security and how it should be addressed as part of the European and wider multilateral agenda. Most of this work is *process* rather than *output* oriented: it is more concerned with institutional mandates, capacities, and agenda setting than with tangible action and results in specific strategic contexts.[12]

Most statements and initiatives that purport to be about climate security are aimed overwhelmingly at reinforcing targets for emission reductions. For example, from the EU's perspective, Paris Agreement commitments have an underlying security rationale, and as such, the EU appears to use the security narrative principally as a means of heightening the general importance of these reduction targets and the multilateral coordination around them. Statements typically stress that the EU needs to change its security policy in light of climate change, but the focus is largely on the Paris Agreement and not on specific changes to EU security approaches in particular countries.[13] It is striking that after a decade or more of generating activity and policy documents on climate security, the EU still has no well-defined list of specific country priorities for its climate security policies; there is no apparent correlation between the overarching goal of emission reductions and the union's country-level strategic interventions.

Increasing climate aid. Since the late 2000s, the EU has intensified its support for developing countries' energy transitions and climate adaptation. So-called climate finance has become one of the fastest-growing dimensions of EU external policy. In 2009, the EU committed 7.2 billion euros to its first formal package of climate funding. Since then the EU's climate financing has grown dramatically, reaching 23.2 billion euros in 2019 and constituting nearly half of the global total provided.[14] Major EU-supported programs include the SWITCH to Green Flagship Initiative, the Africa Renewable Energy Initiative, and the Global Climate Change Alliance Plus. The 2021–2027 Multiannual Financial Framework stipulates that a minimum of 30 percent of all EU funding will be spent on climate-related projects.[15] In 2019, EU members committed to increasing their contributions to the United Nations (UN) Green Climate Fund to help developing states with energy transition.

Undoubtedly, the EU has played a lead role in mobilizing such funding. Still, the overall scale of funding is relatively limited, and most states under acute climate stress receive modest amounts of European funding. Moreover, the indirect approach to climate security is evident in the way that the EU spends its climate funds. The EU's projects generally seek to build energy transition issues into the union's broader development policy goals. The union also tends to equate the export of its own regulations with good external climate policy. And despite a recent tilt away from mitigation to adaptation projects, security objectives are generally not deeply thought through in EU-funded initiatives. Indeed, often the EU's development and regulatory agendas involve it working on climate adaptation with the very political and security actors responsible for instability.

The link between climate financing and EU security goals is generally assumed rather than demonstrated in a precise fashion.[16] Diplomats acknowledge that, on the ground, various actors tend to perceive the EU as mainly a funder of development projects that lack direct political leverage. And they admit that it has been difficult to tie aid to context-specific climate stresses, beyond the broad climate mitigation mandate.[17]

Mitigating the impacts of climate on conflicts. The EU has presented this development focus as an important contribution to addressing the climate-related drivers of conflict and instability. The aim is to help foster social and economic conditions capable of offsetting conflict dynamics and the social tensions associated with climate stresses. The EU has been more reluctant to undertake direct engagement in conflict scenarios.

Diplomats point out that many CSDP missions have deployed to climate-stressed areas. Yet climate stresses have not been among the factors triggering these deployments, and neither have CSDP missions included explicit or direct operational elements related to climate change. For instance, CSDP missions in the Sahel and Horn of Africa have focused on counterterrorism training and capacity building, not climate factors. Climate security stresses have not prompted the EU to intervene in conflicts. While EU diplomats have begun to assess climate factors as part of conflict management scenario building, member state governments do not see armed interventions as being a central part of the climate security agenda.[18]

The 2019 implementation report of the EU Global Strategy insisted that the "climate-security nexus" was one of the areas where a "joined-up" approach had advanced most effectively among different parts of the EU and claimed that "climate action has become an integral part of our work on conflict prevention and sustainable security."[19] Germany launched an effort to get the UN Security Council to deal with climate issues in fragile states and for UN peacekeeping to build in a climate angle. Yet it is difficult to see any tangible upgrade in EU conflict interventions as part of the climate security agenda. While European diplomats insist that climate-related foresight and early warning are already built into EU policies in fragile contexts, it is difficult to pinpoint concrete interventions or CSDP operational changes that have flowed from this.[20]

EU leaders have often pointed to the climate stresses behind the Syrian conflict; yet the EU's position in this conflict has been strikingly hands-off. There has been little sign of committed EU diplomatic engagement in the key flashpoints of climate stress—like the tension between Ethiopia and Egypt over the Nile, or in the Mekong delta. Some European militaries have deployed to conduct rescue operations in climate-induced natural disasters, but they have resisted taking on any wider climate conflict mandate. At the end of 2018, the EU's Civil Protection Mechanism was updated partially to account for climate risks, but only with a narrow mandate to provide equipment for climate-related disasters like storms and forest fires.

The EU's 2020 Climate Change and Defence Roadmap may herald more climate-related operations, although for the moment it is mainly about equipping EU militaries for extreme climates and finding ways to reduce the operations' dependency on local resources.[21] This ethos complements numerous new defense initiatives to make European defense equipment more energy efficient and less dependent on external environments.[22] Moving in a similar direction, a UK climate security review that began in March 2020 reported that the Ministry of Defence still has to move from examining climate-related impacts that *could* occur to implementing concrete policy interventions, cooperating with countries' militaries on climate factors, and preparing personnel and equipment for possible climate interventions.[23]

Applying conditions to trade. The EU has begun placing climate-related conditions on its external relations in the last several years. But the way it formulates and implements this conditionality accentuates its indirect approach to climate security. The EU's conditions do not reflect a full understanding of security-related climate challenges. Climate conditionality has become a more prominent part of the union's trade agreements; ongoing tensions with the Association of Southeast Asian Nations and states from the South American trade bloc Mercosur provide two examples of this prominence. The EU has likewise moved toward making not only trade but also some aid conditional on developing countries' efforts to reduce carbon emissions.

Although this conditionality demonstrates an attempt to link climate and trade policies, it is not specifically applied to temper external instability and security risks. Arguably, the approach is also beset with internal inconsistency: the EU wields punitive leverage to prompt emission reductions with the reward of deeper trade, which drives those same emissions higher. Developing countries accuse the EU of failing to understand the direct impacts on security, as conditionality is linked to emission targets in a way that undermines traditional livelihoods and fosters more social instability and stress.[24]

Conceptually linking governance and climate. It is often argued that better and more open governance and local-level participation are required to ensure that energy transitions are steadily taken forward. Yet the link between governance and EU climate policy is hardly visible. The climate security agenda has not driven an upgrade in the EU's good governance, human rights, and democracy work around the world. The EU has increased its security cooperation with many autocratic regimes that have worsened climate instability; CSDP operations in both the Sahel and Horn of Africa show this clearly. With China now formally committed to net-zero emissions by 2060, the EU has stepped even further away from pressing the Chinese regime on governance or human rights issues in the country. Also, the EU has begun to fund initiatives to help oil and gas producers diversify and reduce the risks of hydrocarbon dependence; in nearly all cases, this effectively helps authoritarian regimes stay in power.

A PROTECTIVE-AUTONOMY APPROACH TO CLIMATE SECURITY

The second conceptual strand of EU climate security policy is the focus on *protective autonomy*. Much of EU external action on climate aims to set multilateral rules and outward-looking cooperative security norms and to shape, through development work, a more favorable context for climate transitions; the objective is to preemptively dilute the effects of climate change. But other action revolves around more immediate and direct self-help; and, in this case, the objective is to hold climate effects at bay and defend immediate European interests.

This strand of protective autonomy is most evident in the EU's heightened focus on border control. The union has invested heavily in strengthening its external borders in recent years, and this effort has become the central element of its security policy. Against the backdrop of projections that climate-related cross-

border movements will dwarf the migration surges the EU has struggled to deal with since 2016, the union has made firm moves toward greater exclusion. Governments have used climate security concerns to justify a certain alignment of CSDP missions with the aim of strengthening border control assets within Frontex and more widely. Although migration might be a necessary climate adaptation strategy—people moving out of climate-stressed locations—the EU has been working to close off migration routes.

It is repeatedly suggested that the EU find a way to acknowledge a formal category of climate refugees. The 2018 UN Global Compact for Safe, Orderly and Regular Migration includes commitments on climate migration. Yet, in practice, the EU and its member states have not agreed to such a provision. (On the whole, the compact is relatively toothless, and several EU states did not even sign it.) It is unlikely that EU states would support any new UN treaty with automatically guaranteed legal rights for climate-induced migration. They have not supported including in the Refugee Convention a reference to the gradual impacts of climate change as grounds to claim asylum. They have also not supported defining migration triggered by climate change as a fundamental right under international human rights provisions.

The tendency toward protective autonomy is also apparent in EU member states' military priorities. European militaries engaged early with the climate security agenda and began to reconfigure their capabilities. They have beefed up their resources and plans for defending home territories against extreme weather, reflecting a "renewed interest in national civil defence capacity."[25] Climate change has put pressure on governments to deploy armed forces domestically to deal with floods and storms; consequently, it has diverted attention away from foreign policy responses to external security risks.[26] An increasing number of procurement projects funded by the EU's Permanent Structured Cooperation process and the European Defence Agency now aim to prepare militaries for such domestic climate-related operations.[27]

Finally, climate change is also one factor among several that has prompted the EU to take a protective-autonomy approach to its international trade policy. Much of the EU's climate-related policy has become more mercantile and defensive of its immediate, vital economic interests.[28] Through the Green Deal, the EU aims to use climate measures more purposively to protect its interests. The union has sought to reduce its dependencies on external suppliers and markets over the last decade; climate factors are not the main driver of this trend, but they have added momentum in this direction. The pursuit of a green industrial strategy and desire to support European renewables companies reflect this protective mercantilism.

Arguably, the EU's planned carbon border tax would be a significant addition to this strategy. In September 2020, the European Commission published a strategy to reduce EU dependency on external supplies of critical rare earths, framing this as part of the wider post-pandemic aim of bringing more production back onshore, especially from China; as such, a European Raw Materials Alliance initiative on domestic sourcing has gained heightened importance.[29] Analysts detect a competitive geoeconomic dynamic underlying EU energy and climate policies across the Middle East and North Africa.[30]

The EU's use of climate conditionality also demonstrates an affinity for protective autonomy. Developing countries have protested that this green protectionism has become a pretext for defending European commercial interests. The EU has certainly become more geoeconomically assertive in trying to neutralize other states' competitive advantages, secure its own supplies, and position itself for commercial

opportunities in the changed global energy landscape. In response, other countries are increasingly pushing back against EU projects and regulations—for example, in relation to renewables development in North Africa.[31] Developing states have also criticized the EU for refusing to relax intellectual property restrictions on renewables technology to help its uptake across the world; they have essentially accused the union of prioritizing its own commercial gains from renewables technology ahead of climate goals.

SHORTFALLS IN EU CLIMATE POLICY

Taken together, these conceptual strands suggest that climate security has risen up the EU's external agenda but without clearly stated, specific priorities and actions. The EU's indirect, context-shaping strategy undoubtedly has much merit. It has helped the EU avoid an unduly heavy securitization of climate issues and has usefully sought to bring underlying causal factors like economic underdevelopment and power politics to the foreground. Yet it is difficult to conclude that the approach supports a security policy per se. Preparing generic principles for climate coordination at the international level and fostering dialogue may have been the right priorities a decade ago when the climate security agenda was in its formative phase. But today, these priorities exude a sense of having failed to move on to a more action-oriented stage.

The focus on protective autonomy reflects calls for the EU to toughen its geopolitical strategies to survive in a more turbulent and constraining global order. While most EU rhetoric stresses how climate geopolitics can deepen states' interconnectedness, some policy developments in practice indicate a desire to disentangle the EU at least partially from its reliance on external energy resources. A key question is whether this protective approach is compatible with the EU's outward-looking efforts to shape international rules and actions. While the EU may be right to hedge and pursue elements of both strategies, combining them in a coherent fashion is an exacting challenge; the EU's climate security policy is currently too ad hoc. The EU risks being caught between pursuing multilateral-driven security and autonomous security.

This conceptualization helps understand why the EU's approach to climate security has so far been too narrow. The policy challenge is more complicated than ritually repeating the mantra that "more must be done on climate security": the tricky questions relate to how the climate agenda intersects with other policies and security imperatives. Many of the EU's other policies cut across climate security; and some of its approaches to climate security cut across broader geostrategy and stability goals. The protective-autonomy approach aims to insulate the EU from external disruptions but may actually impede the necessary systemic changes needed for durable security. As a result, at least some of the EU's climate change strategies risk worsening instability and security risks.

For example, the EU pushes progress toward emission targets in a way that might actually deepen instability within other states and tensions between states. In any given developing country, the EU typically operates a handful of projects on decarbonization but then works with the same country to expand trade and growth that relies on the very economic model causing climate stresses. Pushing other countries to increase their supply of renewable energy to Europe can have destabilizing effects in many local contexts and act directly against nominal climate security goals. The EU has begun to prioritize

climate partnerships with regimes whose approach to governance and economic challenges drives more instability and a wider range of security threats. And maximizing EU commercial gains in renewables is certainly not the same thing as fostering local ownership of energy transitions and increased stability in developing countries. The common line that the EU should internationalize its Green Deal leaves little room for addressing complexities in the link between climate and security policies.

While the EU has become more engaged in the nexus between climate change and security, most of its actions in this field have been about putting Band-Aids on limited parts of the problem. The union sees international climate politics as being largely about reducing carbon emissions and has focused less on how the wider range of climate impacts requires far-reaching or systemic change to the EU's geoeconomic, military, development, migration, and other policies. Emissions targets have become a kind of security policy by default rather than integrated elements of a broader, direct security-oriented approach. The focus on making emissions cuts to reduce risks and instability in the long term overshadows how the EU will deal with climate security challenges in the here and now or how the Paris targets are to refashion the strategic balances that underpin the global order.

It is perhaps revealing that European leaders routinely use the slogan that "climate policy is foreign policy" but not the inverse that "foreign policy is climate policy." The union tends to see climate instability as an issue "out there" beyond Europe's borders rather than an issue that the EU's economic models and external policies contribute to. The following analyses in this volume will further substantiate this point and discuss how the EU could move beyond its current framing of climate security and adopt a wider ecological diplomacy.

CHAPTER 2

THE NEED FOR AN EU ECOLOGICAL DIPLOMACY

OLIVIA LAZARD

Taking a more effective approach to climate security requires reconceptualizing the links between climate change, ecological disintegration, and conflict prevention/management. It calls for a coherent and comprehensive European *ecological diplomacy*, which focuses more intently on conflict and fragile zones and systemically shifts the EU's geoeconomic, regulatory, trade, and multilateral power toward efforts that advance socio-ecological peace and stabilization. EU climate policy needs a stronger emphasis on ecological integrity and the regeneration of the environment.

THE LIMITS OF CLIMATE SECURITY

The limitations of EU policy stem from the narrow way in which the union conceptualizes climate security. The EU's many policy initiatives undoubtedly have virtues but largely deal with the symptoms of climate insecurity rather than its root drivers. To develop a more effective approach, the EU needs to adopt a far broader notion of ecological security, and beyond, of ecological integrity. It needs to drive the revitalization of critical ecosystems that naturally regulate the global climate regime, while simultaneously underpinning fundamental natural interdependencies that ensure healthy water, food, and air security. It also needs to support the revitalization of environmental resources in arid and semi-arid zones so as to combat the growing scarcity that threatens stability and peace around the globe. Adopting an ecosystems lens necessarily entails identifying how to support and empower communities and societies for better ecological stewardship.

In recent years, the EU has begun talking about climate change as an "existential threat."[32] This language is often associated with the need to decarbonize fast in order to avoid runaway climate change. The EU is shouldering its decarbonization responsibility and is working to reduce its energy footprint. The union

views this decarbonization as a global public good and a contribution to international peace and security. However, the way in which the EU currently conceptualizes this existential threat remains indirect and limited at best. In addition, the transition pathways the union is opting for even risk damage to global security and further climate breakdown due to the extraction-intensive nature of decarbonization.

Climate change results from and drives ecological crises going beyond the release of excess carbon dioxide emissions into the atmosphere. Insecurity results from the corrosion of multiple ecological interdependencies that hold the planet in balance. When these interdependencies are broken, they reduce the health of water, soil, and biodiversity systems that underpin life. Their effects go beyond local impacts. Ecological stresses reverberate across regions as healthy interdependencies weaken and biophysical regulations of the planet wane. Societies suffer from the effects of these disruptions as food and water become scarcer and biodiversity diminishes. Tackling this wider ecological challenge is essential to redefining what security means in the face of planetary boundaries whose thresholds are being dangerously crossed. To date, the EU and the rest of the international community have developed strategies that only respond to one narrow element of what is a multifaceted crisis. In doing so, the EU's own climate transition pathways are currently set to accelerate other ecological crises; they stand to worsen insecurity rather than act as a remedy to security concerns.

Since 2007, when the topic of climate security was first discussed in the UN Security Council,[33] policies and research have focused on adding climate elements to existing approaches to fragility and conflict. The UN debate about climate security has centered on specific conflict theaters, such as Lake Chad,[34] Somalia, Iraq, and the Sahel, and how climate change will impact conflict dynamics in these settings. This debate is unduly narrow for a number of reasons.

First, it frames climate security as being geographical rather than systemic. The working assumption is that climate-driven fragility, violence, and conflict is generated outside the EU and other advanced economies; in reality, these economies are part of the systemic problem, and climate stresses percolate across the global system. Second, security planners have largely integrated climate risks into conventional risk analyses rather than developed new frameworks for security. Third, the focus has been on how climate change will impact violence, insecurity, and conflict but not the reverse—how these factors drive broader ecological disruption and climate breakdown. Fourth, security planners have generally viewed the environmental challenge as being mostly about carbon emissions, neglecting many other aspects that contribute to global climate disruptions: the disruption of the hydrological cycle alongside the carbon one, the decrease in soil fertility, and the territorial and ecological fragmentations contributing to the sixth mass extinction. All in all, climate security policy frameworks have largely failed to grapple with a deeper phenomenon: ecological disintegration is increasingly endogenous to the fragility of the international system as a whole, of which climate change is but one symptom.

ECOLOGICAL DISRUPTION

A more comprehensive approach would move beyond the current concept of climate security to a broader notion of ecological security.[35] This would mean looking beyond carbon emissions and understanding climate change as an ecological crisis driven by an ongoing expansion in energy use, economic growth, and geopolitical competition. Climate change is a long-term process of all-encompassing ecological change and accelerating disintegration on a planetary scale. This process is driven by systemic assaults on marine and terrestrial ecosystems and resources that underpin food, water, health, and environmental security, as well as naturally regulate the global climate regime.[36] If humanity were to stop using fossil fuels tomorrow but continue to plunder ecosystems, climate change would still reach catastrophic levels. The integrity of ecosystems is supported by the health of soils and corals, water and biodiversity, *and* the interdependencies between them. In turn, the health of the planet depends on the health of each and every interconnected ecosystem.

Understood in this way, ecological security is the precondition for all other types of security. Ecosystems provide life-generating and life-supporting systems that underpin human civilization. Without ecological security, socioeconomic and political fabrics unravel, leading over time to conflict and violence. Ecological security requires restoring the integrity of ecosystems and their interdependencies. But the EU is not yet institutionally equipped to tackle the wider parameters of ecological disintegration. It does not have the necessary competencies to understand security and ecological issues in an integrated way, nor does it have intra-institutional processes to design a strategic approach to the combined challenges of decarbonization along with the redesign of economic models. Different parts of the institutional machinery grab hold of specific elements of the puzzle that they can deal with as part of existing strategies—like building tentative climate factors into early warning systems, for example. But the siloes prevent the EU from systemically linking ecological issues to security policy.

Reconceptualizing security in the face of climate change requires the EU to adopt an ecosystems-based approach. The vitality of ecosystems and natural living systems is under threat globally. Poor development planning, infrastructure expansion, pollution, transformation of land and seascapes for agriculture and food production purposes, urbanization, energy development, and illicit trade are all contributing to the depletion of natural resources, thereby undercutting ecological interdependencies—a trend borne not just from climate change but also deforestation, biodiversity loss and soil impoverishment due to exploitation, and disruption of the hydrological cycle.

Current climate security responses generally fail to address the endangered resilience of ecosystems, which is allowing depletion to accelerate. As natural resources become scarcer, they become the driver of destabilizing forces, including growing insecurity, corruption, conflict and illicit economies, marginalization and inequality, political-economic exclusion, and geopolitical competition. These

forces, in turn, fuel the planet's trophic downgrading and more land, water, and nonrenewable resource predation—all of which further drive destabilization and climate disruption.[37] The EU continues to focus on the tail-end impacts of ecological disruptions instead of adopting an ecological approach that redefines its engagements in foreign policy, development, trade, and climate adaptation and thereby addressing the actual drivers of ecological disruptions.

Some ecological trends are particularly worrying. Eighty-three percent of wild animal biodiversity has disappeared. While the loss has been driven primarily by socioeconomic expansion (urbanization and agricultural and extractive development) into wild areas, illegal wildlife trade and trafficking are increasingly contributing to the problem.[38] The reason is simple: the rarer a resource becomes, the more lucrative it becomes to rent-seeking actors. In 2016, the World Bank estimated that wildlife trafficking ranges from $7 billion to $23 billion a year, with transnational criminal networks working across Africa, Asia, and Latin America to meet growing demand in China, Europe, and North America. Armed groups, such as the Janjaweed and the Lord's Resistance Army, have engaged in wildlife trafficking to finance their other activities.[39] Where biodiversity weakens, cascade effects can put entire food chains at risk. Soil fertility and water storage can decline—threatening even wet areas with progressive desertification, adding to climate change processes, and leading to sudden onset fires, including in relatively untouched areas.[40] This is a process of scarcification. Scarcity, in other words, is not the result of natural processes but rather of human activities generating shortage, disruption, and insecurity. Further, in arid areas, natural resource decline has already led to changes in livelihood patterns and feedback loops with abundant contexts. For example, some nomadic herders from Niger and Chad now have to travel as far south as the Central African Republic to ensure the survival of their cattle. This creates a connecting node between interregional conflict systems. On the way, some herders start taking part in conflict economies, which include illegal timber logging, wildlife trade, and artisanal mineral extraction—all of which in turn contribute to trophic cascades, deforestation, soil pollution, desertification, and water evaporation.

The fragility of the water cycle is the core concern, and as such, should take center stage in policy and programmatic responses. Ecosystems in forests, grasslands, peatlands, and wetlands are responsible for cycling water—moving water from underground to atmospheric levels, cycling it from liquid to gas. Processes of evapotranspiration from vegetated areas and transpiration from desert areas cycle water, while soil quality helps to store water underground and replenish aquifers.[41] With the plundering of ecosystems, the hydrological cycle is being broken, causing droughts, water scarcity, fires, and floods in ecologically depleted areas.

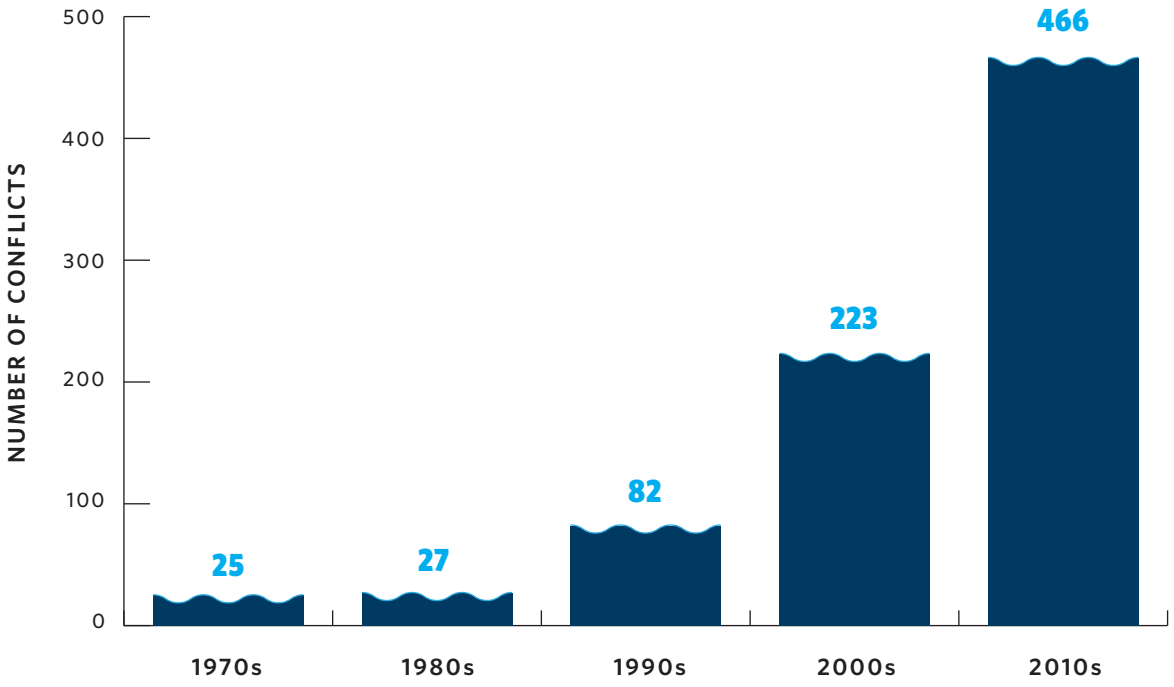
Disruptions transcend local impacts as water distribution within and between ecosystems becomes impeded. For example, wet forests in Central Africa distribute 40 percent of rain water to the Ethiopian highlands, where the Nile River begins.[42] But with rampant deforestation and the continuing loss of biodiversity in Central Africa, the risk of droughts in the Ethiopian highlands and riparian states along the Nile adds another layer of complexity to discussions surrounding construction of the Grand Ethiopian

Renaissance Dam, which will inevitably change the Nile's flow and geomorphology.[43] The longer-term implications will be severe, as water stresses may lead to overt conflict among riparian states, as well as to intrastate food and water insecurity.

Preventing such scenarios does not just depend on the actions of Nile riparian states, but also on the development and economic pathways that Central African states adopt. Yet no multilateral agreements exist to help these regions make the best of their ecological interdependencies. While it is true that water scarcity does not lead automatically to conflict, it is also true that water conflicts have been on the rise across the globe, correlating with significant disruptions in the global hydrological cycle (see figure 1); water is now being released into the atmosphere twice as fast as previously forecast by climate models, compounding the effects of carbon dioxide at planetary level.[44]

FIGURE 1

Water-Related Conflicts Are on the Rise



SOURCE: Adapted from Francesco Femia and Andrea Rezzonico, eds., "The Security Threat That Binds Us: The Unravelling of Ecological and Natural Security and What the United States Can Do About It," Council on Strategic Risks, February 2021, https://councilonstrategicrisks.org/wp-content/uploads/2021/01/The-Security-Threat-That-Binds-Us_2021_2-1.pdf.

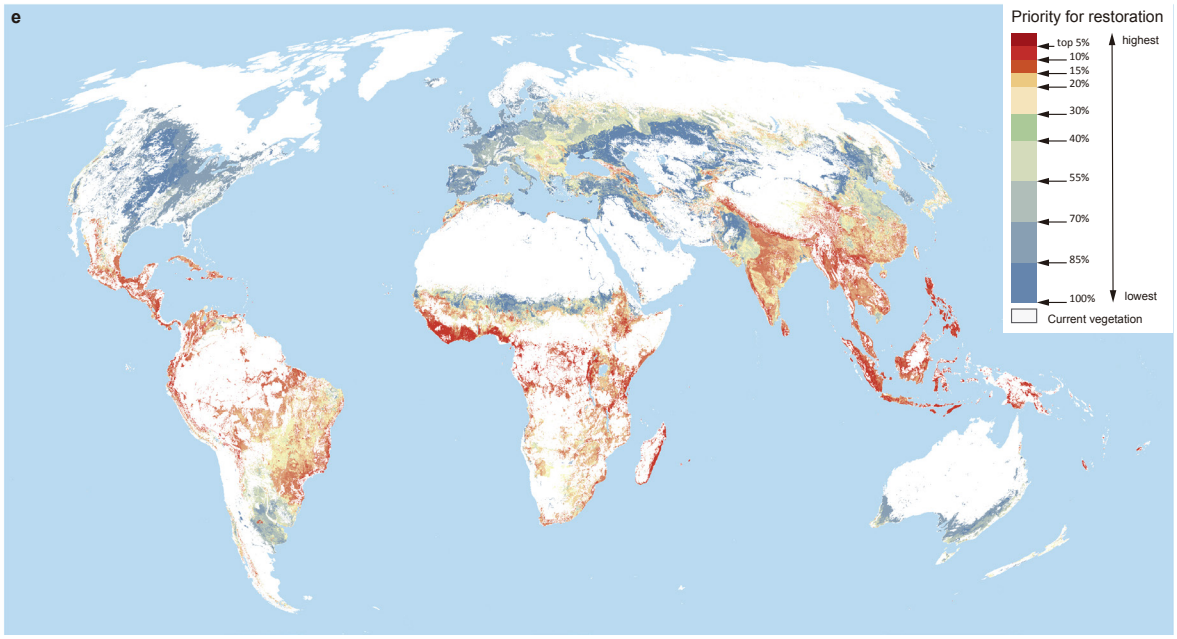
THE MERGING OF CLIMATE AND WATER SECURITY

The challenges are mighty, but actionable solutions are at hand. It is possible to restore the hydrological cycle by "replanting" water through context-adaptive ecological regeneration. Ecological designers and disaster risk reduction practitioners urge the international community to support landscaping techniques at scale to recreate water-retention landscapes. Through taking supportive topographical, ecological, and biological measures like these, it is possible to reboot ecological functions, replenish degraded resources, buffer extreme disasters, and provide food and water security from the local to the global level. These measures should be part of comprehensive regeneration agendas to achieve the critical restoration of ecosystems.

This needs to happen at a global scale so as to fight off increasing scarcity and run-away climate change scenarios, but certain areas demand priority attention. The map below identifies these priority areas for the immediate regeneration of ecosystems. Because many are located in conflict-affected and fragile areas,

MAP 1

Global Regeneration Priority Areas Coincide With Conflict-Affected and Fragile Contexts



SOURCE: Bernardo Strassburg, Alavaro Iribarrem, Hawthorne Beyer, Carlos Cordeiro, Renato Crouzeilles, et al., "Global Priority Areas for Ecosystem Restoration," *Nature* 586 (2020): 724–729.

it is clear that regeneration measures must become part of conflict prevention, mitigation, and resolution initiatives. Peacemaking actors need to adapt their mandate and scope of action quickly to make both human and ecological stabilization efforts a priority. This will not be easy because peacemaking actors have often dealt with natural resources in a siloed way. They need to shift their perspective toward making nature and its complex systems part of their analysis. Beyond this, they need to ensure that nature is discussed at the negotiation table—a tricky feat in conflict contexts where elites often depend on extractive and predatory politics to maintain their power.

Regeneration's complexity also applies to the ecological dimension. It will require reconceptualizing land and sea use, redefining what development looks like, and tackling the nexus between extraction and predation within conflict and fragile regions. Comprehensive regeneration processes, based on inclusive ecological design, must be linked with political-economic and security sector reform processes. This is to ensure that natural resources do not drive conflict or fall prey to the plundering that weakens security at local, national, regional, and planetary scales. Redesigning regenerative landscapes is as much about the ecological as the socioeconomic benefits that accrue: supporting local biodiversity to reboot resilient systems, which often requires working with indigenous communities who have stewarded healthy ecosystems for centuries; replenishing and expanding water, food, and other resources, which will further support ancestral livelihoods and stable communities; and enshrining regeneration in cooperation and treaty agreements, which will nurture interest-based stakes among all those who depend on the integrity of the environment as a whole, particularly in transboundary contexts. Viewing peace and stabilization through the lens of political ecology is an invitation to rethink institutional, social, and economic relationships within and between human systems and ecosystems in a way that is truly equitable and sustainable.

Implementing a narrow climate security agenda while continuing current economic, political, institutional, and development practices in a business-as-usual way will undermine security at all scales (box 1 offers examples of this happening in practice). A complex regeneration agenda is needed to combine dividends in the fight against climate change, water scarcity, and fragility. The EU's foreign policy should be redesigned accordingly, starting with an emphasis on conflict-affected and fragile zones and expanding into other areas of economic, development, and security cooperation. This will require the EU to use ecosystems-based mapping and to integrate new technical experts within its diplomatic and cooperation ranks, including ecological designers and hydrologists. Moreover, the EU faces another challenge in addition to pursuing complex regeneration and ecological diplomacy: preempting the risks associated with the union's Green Deal and transition pathways. Indeed, if the EU and the rest of the international community were to switch to decarbonized energy systems tomorrow but continue to pursue growth as usual, fail to regenerate ecosystems, and underinvest in the prevention and resolution of conflicts worldwide, planetary boundaries would still be under threat. Conflicts and geopolitical destabilization would still deepen. Further, the EU also has the challenge of grappling with a wicked problem: the materials necessary for low-carbon and digital transitions are located in the critical ecosystems that need to be regenerated.

BOX 1

COMPLEX REGENERATION: A NEW FIELD OF PRACTICE WITHIN ENVIRONMENTAL PEACEMAKING

Regeneration projects have been ongoing for decades, but the bridge between peacemaking actors and conservation/ecology actors has not been created—to the detriment of both. The ecological regeneration of priority areas located in fragile and conflict-affected contexts calls for complex approaches, which the EU should pilot, incubate, and expand upon.

For example, in the Kivus, in the eastern region of the Democratic Republic of the Congo, simple regeneration projects were implemented in the Virunga National Park over the years by conservation actors. But these projects never took into account how important timber is to local and conflict economies. By looking only through an ecological lens, they fed the latter, thereby contributing to continuous conflict cycles. In their own field, peacemaking actors looked at their mandate through political and economic lenses only. They focused their attention on mineral extraction, while losing sight of the economies dependent on deforestation and of the pervasive effects the latter had on stability over time. In general, peacemaking actors focus on natural resources at the expense of natural ecosystems and end up facilitating agreements that undermine ecological integrity, thereby protracting conflicts over time. A set of common analyses, approaches, and tools are needed to ensure that safeguarding nature is considered part of peacebuilding.

There are examples of successful regeneration processes, but they are still vastly disconnected from political mediation, peace process design, and stabilization planning.

The Danish Refugee Council has been pioneering approaches for the regeneration of landscapes at micro-scales that support food and water security for communities in Burundi, Uganda, and Yemen.[45] The work they do helps to dampen the effects of disasters such as floods or droughts, which tend to increase fragility for conflict-affected communities. Their pilot projects have also yielded results in terms of gender empowerment, governance strengthening, inter-community dialogue, and socioeconomic stabilization. But this type of work often remains confined to the realms of disaster risk reduction and community empowerment, without connecting with the larger stakes of peacemaking, even though the communities that work on regeneration could contribute to political processes aimed at solving conflict.

The same logic applies to more ambitious regeneration projects such as the WeatherMakers in the Sinai Peninsula; this effort could restore dynamic weather patterns and moisture distribution in Central Asia.[46] Regeneration at all scales is urgent and necessary, but these environmental initiatives often take place without due consideration for the political and security implications involved with bringing back resources. Mediators and political experts are needed to accompany processes associated with nurturing ecosystems back to life and recreating governance agreements that help to maintain regenerative patterns and equitable sharing of resources.

MANAGING THE GREEN DEAL'S EXTERNAL RISKS

The European Green Deal stands on decarbonization and digitalization as the two legs of a whole-of-society and whole-of-economy transformation.[47] This suggests that digitalization of the economy and technological innovation are central to solving the global climate crisis. By going virtual and being more technologically and energy efficient, the EU aims to decouple its economic footprint from the natural world, thereby ensuring continued GDP growth and socioeconomic progress while reducing its environmental impact. The implied assumption is that climate action does not require any fundamental change to the EU's economic and financial models—rather it is simply the source of power used to sustain these models that must change. In this way, decarbonization and digitalization is presented as a security strategy by default.

This scenario is flawed. The EU may move away from fossil fuel—a hard enough endeavor—but its model for a low-carbon transition will entail extracting vast materials from the natural world. The EU's current renewable and digital future depends on raw materials obtained through extractive mining—for its energy sector (solar, wind, fuel cells, lithium-ion batteries, transportation electrification); technology (robotics, digital technologies, 3D printing); and military equipment (drones). The EU currently views its "security" in terms of guaranteeing access to such materials.

Although it is necessary to decarbonize in order to stem climate change, the implications of the EU's model are serious. It is known that "without dramatic shifts in economic development strategies away from a reliance on extraction, exploitation, and consumption . . . the world will not meet its ambitions goals for sustainable development, climate, and forests."[48] And yet the world is about to invest in an energy transition that will increasingly rely on extractive activities that compound environmental stresses and local human rights abuses.[49]

In 2017, the World Bank looked at the prospective impacts of mining for low-carbon transitions and concluded that a renewable energy future will actually be more material-intensive than current fossil fuel energy systems.[50] The extraction of minerals and handling of rare earths and related materials are extremely water intensive and highly polluting processes, which compromise the quality and quantity of water available in the areas where extraction takes place.[51] This then leads to a decrease in human health and food security and to changing rainfall patterns.[52] In light of the growing scarcity of water globally, engineers worry that there will not be enough water to process the minerals necessary for the transition, but they fail to consider how extraction itself causes water depletion and hydrological disruption.

The European Environment Agency has voiced concerns about the current transition model.[53] The decoupling of growth solely from carbon emissions may be possible for certain periods of time, but there exists no evidence that economy-wide resource decoupling is possible across the board. In fact, current evidence points to the opposite phenomenon: decoupling the economy from greenhouse gas emissions requires a *recoupling* of economic growth and resource extraction, risking further ecological disintegration.[54]

Geopolitical factors also come into play. The EU is one of the most resource-poor regions when it comes to the materials necessary for the decarbonization and digital transition. The EU's main worry is that about 80 percent of known rare earth deposits and related resources are concentrated in China. This is an endowment that China has managed to leverage in its economic development and geoeconomic strategies. By vertically integrating its supply chain from extraction all the way through to processing and exporting, China has become globally central to low-carbon transition economies.[55] The EU is therefore understandably intent on diversifying supply chains to ensure energy and technological security.[56]

However, alternative sources carry enormous strategic and ecological risks.[57] Map 2 shows two critically important dimensions of the transition pathways. First, the locations of necessary resources overlap with critical ecosystems that house various types of biodiversity and that cycle carbon and water globally.[58] These ecosystems include the Amazon, the Congo Basin, the wet forests of Indonesia, as well as deep sea beds. Losing them to deforestation, pollution, and land and sea changes would accelerate ecological disintegration exponentially. Second, most of these resources are located in fragile and conflict zones. Mining and extractive ventures in these zones are often correlated with predatory behavior involving state and business elites and with extreme economic inequality.[59] The risk of conflict is heightened by geopolitical competition in a race for resources that will see global demand soar in the next decade. In pursuing a decarbonization agenda, the ecological, human, and hard dimensions of insecurity will likely become more interconnected, along with the local and global dimensions.

MOVING BEYOND INDIRECT AND REACTIVE SECURITY RESPONSES

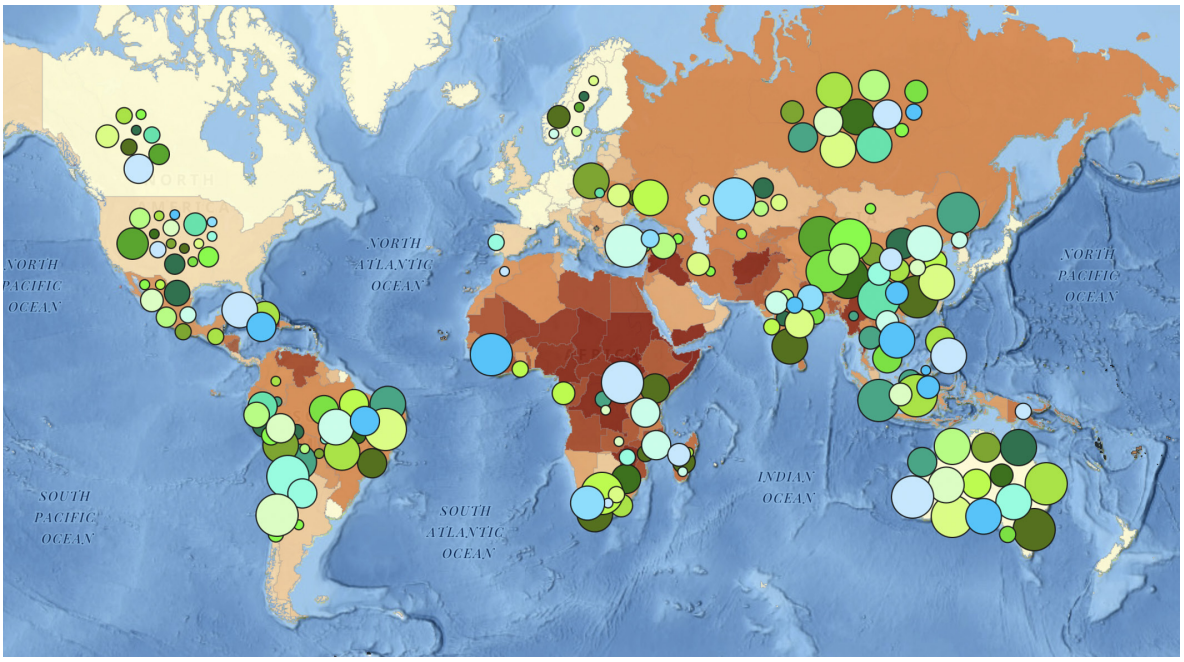
Failing to connect the dots between decarbonization, ecological threats, and conflict horizons will leave the EU with what Richard Youngs describes as protective-autonomy responses (see chapter 1). It will lead the EU to build up defenses against growing climate-related risks and increasing migration in an ecologically disrupted world. Simultaneously, it will push the EU to prioritize geopolitical competition for ever-scarcer natural and mineral resources—an approach that will simply cause greater instability and insecurity in the future.

The EU needs to better understand the linkages among geopolitical competition, climate-related risks, and human survival before it can formulate a broader approach to ecological security. Moreover, it needs to appreciate the ecological and security implications of its current economic models and transition policies and adjust course accordingly. The EU should come to grips with the tensions between energy and ecological security. In the medium term, the union must be open to economic, fiscal, and political remodeling to ensure that it aligns its economic consumption and production patterns with planetary boundaries. This calls for simultaneously updating geopolitical, regional, and national security definitions and redesigning eco-social contracts at home and abroad, ensuring that they remain adaptable and based on the collectivization of responsibilities and risk responses.

Ecological disintegration presents the same threat as nuclear war: the collapse of civilization. Today, the risks of disintegration play out most acutely in key conflict and fragile zones, but they are not confined to these zones and instead constitute a systemic threat. Ecological disintegration must be

MAP 2

Beyond China, Critical Materials for the "Clean" Transition Are Located Both in Critical Ecosystems and Conflict-Affected and Fragile Zones



Legend

Fragile States Index 2019 Ranking
(1 most fragile, 178 least fragile)

- >156-178
- >133-156
- >111-133
- >89-111
- >66-89
- >41-66
- >16-41
- >0-16

Mineral Commodities

- Bauxite and alumina
- Chromium
- Cobalt
- Copper
- Graphite
- Iron ore
- Lead
- Lithium
- Manganese
- Molybdenum
- Nickel
- Rare earths
- Selenium
- Silver
- Tellurium
- Tin
- Titanium
- Zinc

SOURCE: Map provided by the International Institute for Sustainable Development, June 2, 2021. Data was drawn from the Fund for Peace's 2019 Fragile States Index, Transparency International's 2018 Corruption Perceptions Index, and the U.S. Geological Survey's 2019 Mineral Commodities Survey. For more information, see https://iisd.maps.arcgis.com/apps/View/index.html?appid=d4f27aa9df4a4d1b96ad70cc15eb88a2&extent=-112.6734,-37.9971,137.2876,58.0773.

fought both through direct interventions and systemic changes. In this sense, the EU must quickly start moving toward an ecological security agenda, and ecological diplomacy must become a frame for its foreign policy.

In practice, this means the European External Action Service (EEAS) must be equipped to better monitor and trace the threats to ecological integrity within and across ecosystems. Conflicts and insecurity must be analyzed through a systemic lens, designed to understand how various transnational threats converge and feed off of each other and how local dynamics lead to cascading effects that put the biosphere at risk

and therefore international security as well. The conflict prevention, stabilization, and peacemaking teams within EEAS and CSDP missions should be better equipped—both quantitatively and qualitatively—to support conflict prevention and resolution but also to fully integrate ecological regeneration into their mandate.

It also means the EU needs to redesign its international partnerships to help countries build and empower their economies without endangering the ecological integrity of key ecosystems. This will, in part, force the union to investigate the fundamental tension between the need to regenerate critical ecosystems in fragile and conflict zones and its growing demand for goods from these areas in support of decarbonization. In short, ecological diplomacy should be designed to address the climate, biodiversity, pollution, water, and food crises altogether, while aiming to reshape geopolitics in support of human and ecological security.

CHAPTER 3

CLIMATE SECURITY, CONFLICT PREVENTION, AND PEACEBUILDING

DAVID MICHEL

For two decades, the EU has been at the forefront of raising climate change on the international security agenda. In 2003, the European Security Strategy affirmed that global warming would exacerbate competition for natural resources, potentially spurring instability in vulnerable regions.[60] Since then, many high-level policy pronouncements have sounded warnings of the mounting dangers to peace and prosperity posed by unchecked climate change. In 2019, the European Council labeled climate change "a direct and existential threat, which will spare no country."[61]

Increasingly concerned that worsening climate change impacts could jeopardize global stability, Brussels has sought to more thoroughly infuse climate risks and conflict prevention throughout the union's policymaking. Successive conclusions of the Foreign Affairs Council have called for "mainstreaming" climate into EU security, development, and humanitarian agendas at all levels.[62] In 2016, the Global Strategy for the European Union's Foreign and Security Policy (EUGS) expressly embedded climate risks within a concerted, "integrated approach to conflicts and crises," designed to deploy the union's full range of policy tools to prevent and respond to global security threats.[63] Building on this framework, EU policymakers have elevated climate security risks to the center of EU defense, development, and peacebuilding policy priorities.[64]

Managing the complex potential security risks surrounding climate pressures and environmental degradation requires integrating multiple policy tools and institutions, as expounded by the EUGS. Yet a number of consequential shortfalls separate the union's declarations of comprehensive policy coordination and its achievements in effectively mainstreaming climate-related conflict risks throughout its foreign and security strategies. First, institutional and conceptual barriers among EU bodies have hindered systematic operationalization of the integrated approach, diminishing the reach and impact of EU conflict prevention and peacebuilding engagements on the ground. More importantly, despite

Brussels's expansive rhetoric characterizing climate change as a global existential peril, the EU has in fact applied a markedly selective lens in its approach to environmental conflict risks—one that focuses on certain actors and causal connections while underplaying or ignoring others. In particular, though the EU recognizes the role of governance in *responding* to climate-related conflict risks, it fails to adequately appreciate the role it can play in *generating* environmental security risks. This governance gap in the EU's conceptualization of climate (in)security in turn risks blinding Brussels to key drivers that may shape environmental conflict dynamics.

THE GOALS OF SOCIETAL RESILIENCE AND POLICY INTEGRATION

When the 2003 European Security Strategy first labeled climate change a security risk, it also identified several other hazards confronting the union, including terrorism, regional conflicts, and state failure, among others. The strategy explicitly linked these challenges to each other, pointing out how state collapse can sow disorder that may fuel regional conflict. Yet it notably neglected to tie climate change to any of these threats.

In 2016, the EUGS described a world both increasingly interconnected and increasingly contested. Terrorism, territorial conflicts, state fragility, organized crime, energy and cyber insecurity, societal tensions, and migratory pressures were menacing Europe, its neighbors and trading partners, and the international political order. The EUGS recognizes that climate change and environmental degradation run like threads through all these threats. According to the EUGS, climate stress is now a significant "threat multiplier," exacerbating a host of dangers to stability and security.[65] Sudden shocks and chronic pressures, such as floods and droughts, can strain state capacities and undermine sustainable development. Deforestation, water shortages, and food insecurity can heighten resource competition, sparking friction between countries or communities. Chronic environmental deterioration can sap social cohesion, drive population displacements, and create instability that can contribute to perpetuating cycles of conflict and fragility.[66]

To meet these myriad and multifaceted risks, the EUGS instructs EU foreign and security policymakers to promote state and societal "resilience." A concept familiar to diverse fields—from ecology and engineering to psychology and sociology—resilience describes the capacity of a system to anticipate, adapt, recover, and reorganize itself under conditions of disruption or adversity, so as to sustain and strengthen successful system functioning.[67] Resilient societies possess abilities to absorb and adjust to external stresses, mitigating pressures to avert or alleviate conflict risks. To that end, the EU's global strategy made resilience a guiding foundation for its external action.

In addition to defining this substantive goal, the strategy emphasized the need for intensive coordination throughout EU policy processes. The complex stresses besetting the EU and the wider world are pervasive. They impact nations and populations across borders and from the local to the global level. Strengthening capacities to respond and rebound from disruptions requires bolstering resilience "encompassing all

individuals and the whole of society."[68] Achieving such whole of society resilience therefore necessitates an explicitly integrated approach to coordinating EU policy and use of the full array of economic, political, military, and civilian tools at the union's disposal.

The integrated approach advanced by the EUGS emphasizes multilateral action, directing the EU to actively engage member states, international partners, and civil society organizations on the ground. It likewise seeks to deploy multilevel strategies to bridge action at the local, national, regional, and global levels. Finally, the integrated approach aims to formulate and implement conflict prevention and peacebuilding interventions across all conflict phases, from early warning to crisis response, stabilization, and recovery.[69] Enhancing resilience and adopting an integrated approach have thus become twin pillars of EU engagement in the world.[70] Resilience has become the objective, while the integrated approach has become the framework to systematically operationalize climate security priorities throughout all EU foreign and security policies.

INSTITUTIONAL AND CONCEPTUAL FRAGMENTATION

The EU has devoted considerable effort to weaving climate security into its conflict prevention and peacebuilding strategies. Yet numerous consequential shortfalls separate the union's rhetoric around comprehensive policy integration and its achievements in mainstreaming climate change and conflict risk throughout the development-security nexus.[71]

Institutional fragmentation has hampered realization of the integrated approach. Numerous observers have noted that neither climate security nor resilience enjoy clear institutional homes in the EU's architecture.[72] Both the funding streams and the political authorities for implementing the integrated approach to peace and security have been divided between the EU's "thematic" and "geographical" desks. With the resources and remits for pursuing climate security objectives spread across the EU organizational chart, clashes, redundancies, and gaps often compromise cohesive policy coordination.[73]

Conceptual fragmentation has also impeded the approach. Document analyses and interviews with EU officials show that different actors understand and apply concepts of climate security and resilience in substantially different ways. Defense organizations, for example, tend to focus on threat reduction, while humanitarian agencies emphasize principles of impartial assistance. Some practitioners believe that entertaining multiple definitions of climate security enables engagement with a variety of disparate stakeholders. Others, though, question whether climate security concepts furnish much practical policy guidance or whether they may even be counterproductive in certain settings. Having different outlooks may create confusion and conflicting priorities more often than facilitate concrete policy synergies.[74]

Strikingly, climate-related conflict and resilience are absent from the mandates of the EU's CSDP missions—perhaps the most glaring shortfall between Brussels's declared strategies and their practical implementation. In the Sahel and Horn of Africa, nine of the current seventeen CSDP civilian and military

missions operate in countries that have been classified among the most vulnerable in the world to climate change.[75] The EU itself has long designated the Sahel and Horn of Africa as critical areas confronting significant climate security risks and also as key regions for EU resilience-building engagements.[76] Likewise, European Council conclusions "underline . . . the importance environmental issues and climate change have for security and defence," while simultaneously highlighting CSDP missions "as an essential part of the EU's integrated approach to conflicts and crises."[77] Yet climate-related conflict risks and responses have not been incorporated into the mandates of any of the EU's CSDP missions.

To be sure, EU policy continues to evolve toward increased integration. The 2020 Climate Change and Defence Roadmap foretells closer links between climate change and defense policy, including around civilian and military CSDP missions. Likewise, creation of the Neighborhood, Development and International Cooperation Instrument helps reduce segmentation of the union's funding abilities by establishing programmable streams for rapid responses and specific peace and stability initiatives. But the fact remains that Brussels's promises of enhanced policy concertation are not new. The current "integrated approach" succeeds an earlier EU push to promote "comprehensive coordination." Ultimately, serial bureaucratic reforms are unlikely to achieve more coherence than previous efforts in the absence of a clear and common political strategy shared across EU institutions.[78]

Despite the EU's robust rhetoric, climate security and resilience remain no more than partially integrated across the union's foreign and security policies.[79] The integrated approach represents a framework but not a strategy. It does not specify how the EU's different policy tools should relate to each other in particular geographic or thematic contexts or in what combinations they should be deployed to address various climate-related conflict risks or to meet resilience goals. The lack of a clear overarching vision may well be limiting the reach and impact of effective policy integration. Numerous EU assessments find that policy coordination often appears to be ad hoc or done in piecemeal at the individual project level, without achieving broader integration across sectors and programs. So too, without strong and consistent strategic direction, promoting comprehensive climate security is more readily overshadowed by other pressing priorities such as addressing migration and terrorism.[80]

THE GEOGRAPHY AND GENEALOGY OF CLIMATE-RELATED CONFLICT RISKS

Cracks in the EU policy edifice put the foundations of the union's strategies in question. Brussels's approach to climate security rests upon two key premises regarding environmental conflict risks, but they are faulty. Largely unarticulated and therefore unquestioned, the premises effectively limit the EU's understanding of the sources and full range of climate-related conflict risks; in combination, they inhibit a truly cohesive and comprehensive approach to enhancing environmental security and building societal resilience.

The first premise concerns the geography of climate-related conflict risks. The EU implicitly conceives these risks as emanating from elsewhere: conflicts catalyzed by climate change and environmental stresses occur in *other* countries, and their security ramifications subsequently impact the EU via external instabilities,

supply chain disruptions, and migratory flows. The EU views these conflicts as an outside party, called upon to offer humanitarian assistance, disaster relief, or peacebuilding interventions. This perspective, in turn, contributes to the logic behind the union's quest for protective autonomy and a toughening against exogenous threats. But this view is substantially incomplete. It ignores how the EU could become a direct participant—rather than a third party—in climate-related conflicts.

The Arctic affords a case in point. With three member states possessing territory in the Arctic, the union is an Arctic power. But warming climatic conditions are making the Arctic's substantial natural resources increasingly accessible, both to the Arctic nations and to aspiring Arctic stakeholders. Russia's long-standing Arctic development ambitions and China's envisaged Polar Silk Road aim to further exploit the region's hydrocarbon reserves, mineral deposits, fisheries, and sea lanes. Paradoxically, the EU remains reliant on Arctic oil and gas even as it looks to the region as a source of rare earth elements central to many green energy technologies that Europe champions. Analyses undertaken for the European Parliament invoke a prospective "revenge of Realpolitik" as Arctic climate changes enable and worsen geoeconomic competition and geopolitical rivalries.[81] Yet Brussels's Artic policy provides scant direction for navigating these intertwining environmental, economic, and security challenges in any strategic way.[82]

The second premise concerns the genealogy of climate-related conflict risks. The EU views the origins of these risks as being solely environmental. In other words, climate change impacts and other environmental stresses—droughts, floods, and desertification—engender resource scarcities and natural disasters. And, in turn, these environmental shocks and pressures fuel resource competition, livelihood losses, population displacements, societal disruptions, and political tensions that can lead to conflict.

In taking this view, strains on the environment and resources represent the *source* of collective grievances, while politics and governance constitute the *scene* on which environment- and resource-related conflicts play out. But this conceptualization ignores the extent to which governance pathologies can generate these conflicts. Inequitable allocation of political power and inadequate access to decisionmaking can contribute more to environmental conflicts than unequal allocation or inadequate access to the physical resources themselves.

The long-running Naxalite-Maoist insurgency in India—once deemed the country's gravest internal security threat by former prime minister Manmohan Singh—exemplifies such environmental conflict dynamics.[83] The rebels mostly come from marginalized Dalit (Scheduled Castes) and Adivasi (Scheduled Tribes) populations. Largely subsistence farmers and rural laborers, they depend on collectively held land, forest, and waters for their basic needs. But decades of Indian policy have deprived them of these natural assets—their communal land and water having been commandeered for large-scale export cropping, irrigation, mining, and hydropower projects. The government's own analyses conclude that this systematic displacement of vulnerable populations from common property and hence their reduced access to environmental resources have stoked the insurgency.[84]

Neglecting the governance dimension may also blind policymakers to an important subset of environment-related conflict dynamics. Policy actions can render environmental systems and resources not only potential catalysts of conflict but also targets and tools of war. Armed conflict can wreak many kinds of inadvertent

and intentional environmental harm.[85] Combat may damage or demolish environmental assets such as wells, water treatment plants, forests, or croplands. Many munitions contain toxic constituents that can contaminate soil and groundwater. Notably, combatants are deliberately weaponizing natural resources for tactical or strategic ends. For example, from Iraq and Syria to Yemen and Ukraine, combatants have seized or destroyed water supplies and infrastructure to counter opposing forces or control populations.[86] Outside of such overt clashes, some security analysts judge that, as environmental stresses grow, some states may utilize control of natural resources such as water and food supplies to exercise leverage over their neighbors.[87]

The EU's lack of attention to governance in regards to the origins of environment- and resource-related conflict has important policy consequences. Because Brussels sees environmental degradation and resource stresses as the principal drivers of conflict, its climate security programming largely focuses on supporting infrastructure to provide water, food, and energy resources in vulnerable communities. Particularly in fragile and conflict-affected countries, the EU sees this strategy as helping both to foster societal resilience and strengthen the presence of the state in under-governed areas through the provision of public goods. The union has paid less attention to building effective local institutions to equitably and sustainably manage those resources—failing to sufficiently reflect that in fragile and conflict-affected regions, the state's legitimacy in controlling and managing resources is frequently contested. The omission is undermining EU peacebuilding and shortchanging a fully integrated and conflict-sensitive approach to resilience promotion.

The Case of Mali

The EU's experience in Mali demonstrates the practical costs of paying inadequate attention to the governance factor in preventing and mitigating climate-related conflict risks. Across much of the Sahel region, precipitation has decreased markedly since the 1970s and also swung to the south. Drought and diminished rainfall have altered the range and growing conditions for crops and grasses, pushing semi-nomadic herders seeking pasture to move their livestock onto the lands of sedentary farmers. Confrontations between local farmers and herders over land use rights and access to watering points periodically escalate into violent intercommunal clashes.[88]

Mounting environmental pressures in Mali intersect with a history of resource conflict. Bamako's postcolonial policies of agricultural modernization and sedentarization—designed to turn arid rangeland into productive farmland—have long served to marginalize pastoral populations. Land tenure reforms that imposed formal titles on lands previously held collectively benefited sedentary communities and allowed the state to take over uncultivated and unregistered land, curbing herders' customary access to grazing corridors and seasonal pastures.[89] Mali also ramped up rice cultivation along the floodplains of the Niger River. Paddies progressively squeezed out the native plants that herders relied on for fodder during the dry season. As decreasing rainfall and diminishing river flows have shrunk the growing zones around the river, herders have increasingly clashed with sedentary rice-growers over the river's resources.

Since 2012, farmer-herder conflicts have become entangled with larger regional conflicts and have led to the emergence of multiple armed groups. Farmer-herder conflicts have spread to large swaths of northern and central Mali, straining customary resource management and justice mechanisms. In the face of persistent insecurity and weak or absent central governance, many communities have formed various self-defense militias. In Mali, ethnic identities, livelihood practices, and patterns of resource use are often interlinked. Typically, the Tuareg and Fulani are herders, the Songhay are rice farmers, and the Dogon are fishers. Consequently, the fault lines of intercommunal conflicts and of resource clashes become mutually reinforcing. Militias become proxies to contest resource access, and armed groups capitalize on communal power dynamics. For example, disaffected herder populations often sympathize with an Islamist movement that frames pastoralist grievances and anti-government resistance in religious discourse.[90]

Two EU CSDP missions have been operating in the country, alongside French, UN, and other multinational missions. The civilian EU Capacity Building Mission in Mali (known as EUCAP) aims to help internal security forces reassert government authority. The EU Training Mission in Mali (known as EUTM) supports training of the Malian Armed Forces. All the missions function under distinct mandates; nevertheless, the collective international presence has substantially focused on combatting terrorism. To this end, the international community has often acquiesced to ethnically based militias operating in areas with weak government presence—militias that are largely accepted or even encouraged by the Malian state. But under the guise of countering extremism, these militias regularly engage in unsanctioned violence against ethnic and political rivals, feeding into and perpetuating the cycle of intercommunal clashes and resource conflict.[91] By not more actively working to defuse these militia activities, or at least becoming less overtly accommodating, the EU and the international community are counterproductively undermining both peacebuilding and societal resilience in Mali.

The EU also prominently supports the Sahel Alliance, a multilateral platform created in 2017 to coordinate development assistance to the G5 Sahel countries (Burkina Faso, Chad, Mali, Mauritania, and Niger). Agricultural development constitutes nearly a quarter of the 20 billon euro investment portfolio. Dozens of projects are under development in Mali.[92] Yet without substantial investment in institutional development and agreed-upon mechanisms for regulating resource access, such projects could ultimately contribute to conflict risks. In Mali, state agricultural programs that benefit certain communities over others underpin much resource conflict.[93] The EU has at times struggled to adequately coordinate development and peacebuilding projects with local stakeholders to ensure that their interests are served.[94] In this troubled context of resource conflicts and ethnic violence, Brussels must take care that its development cooperation efforts do not inadvertently exacerbate Mali's intercommunal tensions and instability.

CONCLUSION

Despite the EU's decades-long push to place climate change and the prevention of climate risks at the core of its foreign and security policy, the union has yet to realize a common, comprehensive framework for pursuing its climate security and resilience goals. The EU cannot accurately take on board the full scope and nature of environmental risks facing the union and the world without tackling the role of governance factors in environment-related conflict risks.

The 2016 EUGS clearly recognized the importance of governance in building resilient states and societies. The global strategy affirms that inclusive, equitable, and effective governance empowers societies to anticipate emerging shocks and pressures, mitigate the impacts that cannot be avoided, and thereby avert or alleviate conflicts before they occur and peacefully manage those that do. By the same token, however, policymakers must correspondingly recognize and wrestle with the ways in which ineffective and exclusionary governance practices can not only undermine resilience but also catalyze conflicts.

Achieving a fully integrated approach to building resilience and lowering climate-related and environmental conflict risks requires adopting an ecological security strategy. Ecological security frameworks encompass the multiple interconnections and vulnerabilities linking global ecological systems. Crucially, these interconnections capture the role of governance—institutions, norms, and policy practices—in both propagating potential risks and promoting resilience. In recognizing human systems and actions as substantial drivers of and responders to environmental conflict risks, an ecological security framework could provide the EU the comprehensive understanding it needs to effectively realize an integrated global strategy.

CHAPTER 4

WIDENING THE EU'S GEOECONOMIC AND REGULATORY APPROACH TO CLIMATE POLICY

ANDREAS GOLDTHAU

The global energy transition is seen as an important response to the growing security challenge of climate change. Going low-carbon will alter the way we produce, what we trade, and with whom we exchange goods and services. It will also impact the security landscape: the pathways toward carbon neutrality will unleash political tensions between those with more and those with less ambition and lead to heated debate around how to get to the final destination. As the EU positions itself as a global climate leader through its European Green Deal, it needs to prepare for new types of external policy challenges and must retool its approach to climate security to meet those challenges. This will involve not just the mainstreaming of climate security into standard instruments of EU foreign policy but also questioning how the EU's determination to be a global decarbonization leader will impact ecological security more broadly.

The EU's decarbonization efforts first need to be understood through a regulatory lens. The EU has an extensive regulatory toolbox, which is core to both the EU's domestic and international power. Indeed, it is in the regulatory and geoeconomic spheres—rather than the hard security sphere—that the EU has real power and better developed tools. Yet, so far, the union has not used these tools strategically in pursuing its external climate security goals. Moreover, the geopolitical spillover effects of the EU's decarbonization efforts remain underappreciated and unaddressed. As part of a formal, central strategy, the EU needs to determine how to effectively use its geoeconomic and regulatory powers when implementing climate, trade, and foreign economic policies if it is to mitigate the severe external security impacts of decarbonization.

The EU has already experimented with using regulatory tools for geoeconomic ends in relation to energy and climate. In the energy domain, the EU has selectively employed a single market regulation to target Gazprom, Russia's state monopolist, so as to counter Moscow's assertive foreign policy. Brussels has also tied some trade agreements to climate action, which clearly is an attempt to use economic means for nonmarket ends. However, none of these efforts is the result of a well-rounded and consistent external

climate and energy strategy. Policies regarding the energy transition, in particular, remain in their infancy, and it will be important to invest more in developing an integrated approach to ecological diplomacy so that the EU can help promote a just transition at the global level.

DECARBONIZATION AS A REGULATORY STATE PROJECT

The EU acts more like a regulatory state actor than a full-fledged security actor. This logically affects how the EU operates and how it addresses internal and external policy challenges. In essence, the union works through the use of regulations, directives, and communications rather than the ownership, treasury, or direct provision of public services. Liberal by design, the EU cares about economic integration and growth and the creation and maintenance of functioning markets. And by extension, it has developed an elaborate toolbox to deal with all kinds of externalities and to foster the provision of public goods or the prevention of public bads.

The EU's regulatory approach to energy is reflected in three packages (1996/1998, 2003, and 2009) that liberalize and integrate the EU's gas and electricity markets; in the 2017 Clean Energy for All Europeans package that aims to move the EU energy system away from fossil fuels; and in the Regulation on the Governance of the Energy Union that synchronizes the planning, reporting, and monitoring of energy and climate measures across the union. These comprehensive legislative measures are designed to shape market structures and the behavior of economic actors.

The EU also takes a regulatory approach to climate change, viewing the problem as stemming from negative externalities. This has led to policies that internalize such externalities. For example, the European Emissions Trading System, the world's first carbon market, aims to cap and put a price on carbon emissions across the union. The European Green Deal, essentially the EU's decarbonization megaproject, aims to redesign the economic incentive systems underpinning individual sectors—from the power sector to the housing, industry, transport, and agricultural sectors. For instance, it is rolling out a common classification system detailing which investments are considered sustainable and which are not.

However, the EU does not always follow a liberal doctrine. When it comes to energy security, the EU has adopted a more catalytic role so as to enhance its energy diplomacy, for example by facilitating strategically important liquefied natural gas projects.[95] The European Commission, in particular, has used its considerable agency to erode national energy decisionmaking, shifting powers in external energy policy to the supranational level.[96] Moreover, the EU has proved that it can use or "weaponize" its regulatory toolbox strategically in the geoeconomic space.[97]

The key problem is that the EU is not designed or structured to think about the climate challenge in a strategic, foreign policy–centered way. Climate security is not yet—but should be—at the center of EU external action. While significant, the EU's climate policy competences are scattered across several directorates and governance levels, including the Directorate-General for Climate Action, Directorate-General for Energy, and even the Directorate-General for Taxation and Customs Union. And though the commission is mandated to negotiate climate agreements on behalf of the EU at the UN Framework

Convention on Climate Change, climate policies remain primarily inward-looking. This explains why the EU's climate security efforts are by and large *indirect* (see chapter 1), focused on mainstreaming and context shaping.

In primarily taking a regulatory approach, the EU has failed to conceive decarbonization as part of a fully comprehensive *ecological* diplomacy. Clearly, the preservation of biodiversity and natural habitats are EU policy goals, as is environmental protection. A plethora of pertinent legal acts—including the Habitats Directive, the Birds Directive, the Water Framework Directive, and the chemicals directive (known as REACH)—testify to that. But the EU's standing as a global environmental leader has to date derived mainly from its export of domestic rules as part of international regulatory competition.[98] This means the EU has more of an indirect and somewhat passive approach to shaping the global environment than a proactive one. It also means the EU remains a far cry from adopting holistic measures to protect the ecological integrity of ecosystems (see chapter 2).

EMERGING CLIMATE-TRADE LINKS

The EU is known for its penchant for proactively shaping global rules and standards. In fact, this is where the EU has arguably exerted most of its policy efforts as an external actor, including in the climate and environmental space. The EU has therefore been described as a formidable global regulatory power. The size of the EU market is second only to the United States' market. It is fair to argue that the European Single Market was the crucial precondition for the EU regulatory state to emerge as a global actor.[99]

Recognizing that market size is not enough, however, the EU, and more specifically the European Commission, leverages the European Single Market to make market access conditional upon compliance with EU regulations. And because of the market's prominence globally, EU rules end up becoming global norms. Thus, as a promoter of stringent climate and environmental goals through market regulations, the EU's sustainability targets become globalized as well and impact the production of goods and services worldwide.

Yet, arguably, conditional market access still is a rather soft approach to exerting external influence. What is more, global sustainability-related norm diffusion is indirect and can be argued to merely constitute a positive side effect of the EU being a lead market with high environmental ambition. This brings in trade as a means to exert direct influence. Because the EU does not have a fully developed foreign policy toolbox, trade increasingly emerges as the second-best mechanism to address external challenges, including climate change. Indeed, the EU is highly competent in leveraging external trade policy to project power.

Over the past ten years, multifaceted climate-trade links have emerged as a result of the EU's decarbonization ambitions. Free trade agreements (FTAs) now tend to include explicit references and commitments to climate targets. For example, a recent Japan-EU free trade agreement specifically mentions the Paris Agreement and carbon emission reductions. And FTAs with Ecuador, Georgia, and South Korea include sections on trade and sustainable development. In fact, the EU has announced it will no longer conclude FTAs with third parties unless the latter subscribe to the Paris Agreement and

ambitious climate targets.[100] Unsurprisingly, the EU-Mercosur Trade Agreement was put on hold due to environmental concerns and some partner countries such as Brazil lacking determined climate action.

The EU's ambition of being an early decarbonizer is clearly driven by its determination to adhere to the Paris Agreement and to achieve climate neutrality by 2050. Global differences in levels of climate ambition, however, raise the specter of carbon leakage—that is, the offshoring of energy-intensive sectors to countries with less stringent decarbonization targets. To level the playing field for European industries competing against outside competitors that face lower climate policy pressure, the European Commission has proposed a carbon adjustment for imported goods and services at the border, also known as the Border Carbon Adjustment Mechanism (CBAM).[101] A March 2021 resolution by the European Parliament calls for the inclusion of all products covered by the Emissions Trading System and for the revenues from a border carbon levy to be used to fund implementation of the EU Green Deal.[102]

There is, however, another element driving the EU's ambition. Decarbonizing early will ensure that the EU enjoys a competitive edge in a future low-carbon economy. As such, the CBAM must also be seen as a strategic trade measure that supports European (green) industrial policy goals. While the Green Deal forces European companies to reposition themselves in promising strategic sectors and to future-proof their businesses for a low-carbon environment, the CBAM props up the EU in an emerging global "green race."[103]

EXTERNAL SECURITY SPILLOVERS

The EU's regulatory approach as described above may advance the cause of sustainability, but it falls short on promoting regeneration. This deficiency, combined with the EU's tendency to look inward, may result in significant security spillover problems. There are at least three distinct ways in which the EU's policies could cause severe negative side effects, beyond those identified in chapter 2.

First, the EU risks putting pressure on the social contracts that characterize some of its neighboring states. Many, if not most, of these states have positioned themselves as the EU's preferred trading partners. But given that their economies tend to be relatively carbon-intensive, a CBAM could make their export products less competitive, with potentially severe consequences for their domestic economies and people's livelihoods. As estimates show,[104] countries in northern Africa, the Balkans, and the former Soviet Union would be significantly affected by a CBAM. With few alternative trading options and slow decarbonization pathways, these states are highly vulnerable to this type of trade-related EU climate action. Unsurprisingly, some emerging economies have criticized both the CBAM, calling it "green protectionism," and the EU's emerging trade-climate linkages more generally.[105]

Moreover, given that the energy transition will drastically reduce fossil fuel imports, particularly after 2030, assets in oil-rich economies will be stranded,[106] with likely consequences for economic and political stability.[107] Many such economies are located in the EU's neighborhood (for example, Algeria). This

problem—coupled with, say, exports from Morocco and Tunisia potentially facing restricted access to EU markets and the already strained social contracts in states characterized by a relatively young population—could cause growth to stagnate and authoritarian rule to break out across the North Africa.

The European External Action Service recognizes the importance of keeping resource-rich economies stable. However, the EU needs to do more to mitigate the potentially explosive external consequences of a CBAM: the fact that the Directorate-General for Taxation and Customs Union is to oversee a CBAM speaks volumes about how the issue has so far been perceived: as a technical and regulatory one rather than a clear climate diplomacy one.

Second, the EU risks leaving developing countries behind. The EU sees clean technology leadership—in the energy domain and beyond—primarily as a domestic precondition for excelling in a Paris-compatible future. The flip side of the coin, however, is that not everyone will share in the benefits of this know-how due to intellectual property rights (IPRs). While manufactured products such as solar photovoltaic panels or clean tech appliances are increasingly available to all at accessible prices, the know-how underpinning their production and the advanced business models coming with their deployment is not.

This presents a problem particularly for the Global South.[108] The envisaged co-benefits of ambitious decarbonization and stringent climate change policies have been, among others, green job creation and the prospect of leapfrogging toward a green economy.[109] But these benefits will not materialize if low-carbon technology transfers do not happen in developing nations. Though the EU has pledged to forge clean energy partnerships, it sticks to its position on IPR protection, noting that it "incentivises investments in green and climate change mitigation technologies."[110] This stance clearly reflects the interest of a sizeable industrial sector and the perceived imperative of strategic positioning in an emerging green race. It may also reflect the fact that the EU—as a regulatory state actor that promotes liberal market economies—cannot relax its IPRs as a principle.

A low-carbon energy transition that gives the EU a competitive edge certainly is not a problem per se. But a green race among clean technology leaders will end up depriving less developed nations of economic opportunity. Moreover, recent research shows that an already existing divide between leaders and laggards in the energy transition is being further deepened by the direction of the financial and policy responses to the coronavirus pandemic.[111] If the EU is unable to connect the dots here, it risks creating new cleavages and climate security challenges, with potentially unsettling geopolitical consequences in developing or fragile countries as well as in Europe's neighborhood.

Third, the EU risks exacerbating the human security challenge, which includes issues directly related to climate and energy justice. As research shows, the energy transition will likely fuel a "decarbonization divide" between those enjoying clean technologies and those bearing the costs (for example, exposure to toxic e-waste scrapyards, child exploitation in cobalt mines, or gender disempowerment in the extraction of resources and raw materials needed for manufacturing low-carbon technologies) (see chapter 2).[112] The

security impact at the individual and group levels is no less important than at the national and regional levels, and as such, it is important to consider the negative impacts of decarbonization on habitats, equality, and social inclusion. Questions need to be raised around energy justice—that is, justice related to the *distribution of costs and benefits*, *procedure* (for example, inclusive decisionmaking), and *recognition* of different social groups and their needs.[113]

The EU has not fully assessed its decarbonization efforts in the context of ecological destruction, gender inequality, or child labor outside its territory. Creating a regenerative circular economy, a key objective of the EU Green Deal, will help alleviate some of the challenge here, as it lowers import needs. But again, this is not because human and ecological security considerations drive the circular economy. Instead, the European Commission cites concerns such as a limited supply of critical raw materials, excess waste, and lower throughput.[114] Going forward, questions also will emerge around forging privileged energy partnerships for the production and export of green hydrogen. Here, the challenges will be to ensure the socially and environmentally sustainable production of green hydrogen and to balance local development needs with the EU's interest in securing, in a climate-friendly way, a sufficient hydrogen supply for their hard-to-decarbonize sectors.

THE CALL FOR EU ACTION

The world's second-largest economy going low-carbon has significant geoeconomic and political implications, but the EU's institutions are not set up to effectively manage them. It is time this changed. Clearly, as pointed out in chapter 6, a mere "internationalization" of the European Green Deal approach will not be sufficient to address the wider geopolitical and human security challenges borne from the EU decarbonization pathway. So what should the EU do to attune its geoeconomic strategies and regulatory power in support of a fully developed understanding of climate security or ecological diplomacy? The answer lies in a three-pronged approach.

First, the EU needs to adopt a whole-of-government approach to mitigating the external effects of the EU Green Deal. The potential security implications of the CBAM need to be vetted. Sectoral stovepipes need to be broken up. And institutions responsible for the Green Deal should align their objectives and efforts. This will help achieve the broader goal of ensuring that decarbonization does not remain an inward-looking bureaucratic process and that the EU takes a holistic approach to managing decarbonization's inevitable external side effects. This will also spur the EU to design a comprehensive strategy for managing the transition to a low-carbon global economy. It will enable the EU to design a visionary foreign policy that works in synergy with the EU's commercial, regulatory, and industrial policies rather than separately as a short-term, reactionary, and constrained European arm.

Second, the EU should better link its approaches to climate, trade, and development policy. This is crucial for enabling the EU to fully engage with China and Africa, as called for in chapter 5. It is also critical to ensure that an ambitious domestic decarbonization agenda coupled with determined global climate diplomacy works to support poorer nations in their decarbonization efforts. The European Commission has hinted it may exempt some developing nations from carbon levies. But even if it does, these nations

will still face structural barriers in accessing clean finance and technology. For example, a recent report by Sustainable Energy for All on twenty high-impact countries concluded that renewable finance remains at only one-third of what is needed to achieve UN Sustainable Development Goal 7 by 2030.[115] Reducing the low-carbon gap, or at least preventing it from widening further, is essential to secure economic prospects and opportunity in many countries of the Global South. This requires focused technology transfers for low-carbon solutions,[116] well-targeted energy partnerships that facilitate clean energy investment, and a specific geographical focus on the EU's neighborhood.

Third, the EU needs to start integrating energy and climate justice components into its processes and institutional procedures. The EU is aware of the distributional consequences of going low-carbon and has set up a Just Transition Fund to buffer the economic and job effects for mining communities and coal-dependent regions. But this applies only internally; the EU's external support is by and large limited to contributing to the UN-operated Green Climate Fund that supports the Global South. The union should do more to reconcile its pursuit of a domestic green development pathway with its ambition to be a global norm setter. To this end, the core justice notions related to distribution, procedure, and recognition could underpin the EU's external action on decarbonization.

The EU must acknowledge that the threat to planetary and human security not only lies in exogenous climate change but also in the ways the union chooses to fight the climate crisis. Decarbonization is a necessary step toward stemming climate change, but it is just one element of a necessary broader response and could have severe negative side effects. Some are calling for a system-level approach to EU external climate relations in order to move toward an ecological diplomacy. Rethinking competencies regarding the Green Deal, integrating policy approaches, and mainstreaming justice principles in EU action across all levels may not be enough to achieve this, but these efforts could help the EU come to grips with the important normative, environmental, and distributional consequences of its decarbonization megaproject.

CHAPTER 5

ECOLOGICAL DIPLOMACY AND EU INTERNATIONAL PARTNERSHIPS: CHINA, AFRICA, AND BEYOND

SOPHIA KALANTZAKOS

The EU considers itself the "most advanced multilateral project in history" and seeks to be the "center of gravity of work that promotes and protects multilateralism globally."[117] The pursuit of multilateralism has long been the union's calling card. But in the changed geopolitical landscape, Europe's position now stands out in contrast to a realist narrative centered on bipolar competition between the United States and China. The EU's multilateral approach to climate security is of particular significance given the United States' competitive bipolar framing, which endangers global efforts to address the climate crisis because it pushes geopolitical rivalry beyond planetary boundaries.

The EU now has an unprecedented opportunity to spearhead ecological geopolitics in the twenty-first century. The groundwork has already been laid. The EU supports the reform of global institutions so that they are more inclusive and thereby more relevant in a changed world. It emphasizes "variable geometry multilateralism" in recognition that there are no longer fixed sets of like-minded countries that see eye to eye on all issues. Although the EU has been willing to work with a range of stakeholders and supports regional multilateralism, it needs to do more to define its geopolitical position as it seeks to mediate and bridge differences, temper contention, and define a solid blueprint to navigate the Anthropocene.

A crucial task for the EU is to reconceptualize its international partnerships with countries that are both at risk from climate disruptions and hold the key to ecological transition because of the share of resources they hold. The EU thus needs to harness its international partnerships to mutually prioritize socioeconomic and ecological development. In this way, it can contribute to the de-escalation of U.S.-China bipolar hyper competition, which if unchecked risks accelerating ecological breakdowns at a planetary level.

THE EU, CHINA, AND ECOLOGICAL STEWARDSHIP

Now is an opportune moment for the EU to expand its rather narrow approaches to climate security and adopt a more ambitious notion of ecological stewardship. As previous chapters detail, the single-minded emphasis on decarbonization has eclipsed the necessary political focus on action in other important areas relating to ecosystem degradation. It is clear today that this narrow approach has run its course. Not only is climate change worsening, but the planet's ecological balance is now on the brink of collapse. In Paris, the die was finally cast; the climate crisis became the central challenge for the global commons. The goal of ecological stewardship will therefore no longer be an achievement to strive for after all other crises are solved, but instead be the core prerequisite for securing the global future. As such, efforts in support of the goal will fundamentally change the nature and scope of EU partnerships with other powers.

Even while prioritizing decarbonization, the EU has been developing a frame of ecological stewardship under the rubric of "living well within the limits of our planet."[118] China too is increasingly seeking to frame a vision and a pathway for dealing with the climate crisis and environmental degradation. Given China's size, carbon footprint, and global reach, the EU will need to work with it in pushing for more responsible ecological stewardship. The Chinese government now projects the term of "ecological civilization" that it defines as the "ultimate amalgamation of socialism, harmonious society, welfare, development, and a sustainable approach to environmental resources."[119] What began as a narrative for internal consumption is increasingly projected globally. China has woven its domestic and global decarbonization and digitalization strategies into wider institutional frameworks.[120] For instance, the Belt and Road Initiative (BRI) has been subsumed under the UN Asia-Pacific Information Superhighway.[121]

For all the tensions that have surfaced between the two powers, this presents at least some degree of opportunity for the union. The EU and China could work together to expand their respective climate policies and take the lead on coordinating ecological security efforts at the global level. Today, their policies mostly focus on operational plans to green their economies. In working together, they could transform them into full action plans that reflect a wider and deeper understanding of what ecological stewardship entails. Together Europe and China are home to over 2 billion people.[122] Their joint efforts could help streamline decarbonization policies, build resilience, and protect remaining ecosystems in both the developing and developed world, thus having major spillover effects for the geopolitical elements of climate action.

The EU could play an especially valuable role in influencing the climate security implications of China's BRI. To date, 140 countries have signed a memorandum of understanding (MOU) with China to participate in the BRI, which unites Eurasia and Africa (to include South America) through trade, infrastructure, and digital connectivity.[123] Transparency mechanisms, clear standards, best practices, and equitable regulations will be required to ensure that the project builds sustainable infrastructure, promotes inclusive economic development, and champions norms and values of ecological stewardship. The EU's cooperation with China might provide a platform for supporting such aims and even offer an opening to introduce a new economic paradigm of regeneration (outlined in chapter 6). Moreover, such cooperation spotlights another reason why EU institutions must urgently adjust in light of the

geoeconomic implications that the shift to a low-carbon global economy entails, as detailed in chapter 4. Even if influencing China's development and climate-related goals will be extremely difficult, working with the People's Republic of China (PRC) should be a central priority.

The suggestion that the EU might work closely with China will raise eyebrows given the growing suspicion over China's rise, its newfound projection of power, mounting economic and technological competition, and the substantial normative differences between the EU and the PRC. But while the EU has tried to apply critical pressure on issues such as human rights, it has not turned squarely against China and has sought avenues of collaboration and exchange in line with its own wider strategic goals and views of the world order. Strengthening coordination on climate, sustainability, and related UN Sustainable Development Goals—for example, through the China-EU Comprehensive Strategic Partnership—would provide a constructive way to enhance both of their broad networks and relations in the developing world. It could open a pathway to further address the geopolitical elements of climate action.

The timing for such an EU effort is fortuitous: the urgency to decarbonize the global economy is no longer in question, there is political will to see it through, and the economics are making more and more sense every day. Political tensions, however, may hamper efforts for a return to growth (post-pandemic) that is both green and sustainable, even while the pace toward decarbonization and the digitalization of the global economy has rapidly accelerated.

Expanding cooperation with China will self-evidently not be straightforward, as the production of the technologies necessary to decarbonize and digitalize the global economy has unfortunately already been drawn into the battlefield of geopolitics. Inevitably, because the path to decarbonization (and digitalization) has already transcended the realm of run-of-the-mill economic competition, attention has squarely turned to the indispensable inputs required for the transitions. As mentioned in chapter 2, both the decarbonization of the global economy and the fourth industrial revolution will rely on rare earths and a growing number of other critical raw minerals, such as lithium and cobalt, that are all highly geographically concentrated and vulnerable to disruption.[124] Moreover, the amounts needed will skyrocket moving forward. According to a 2020 World Bank report, the production of lithium and cobalt may increase by 500 percent by 2050 to meet clean energy demand alone.[125] In terms of access to these resources, China retains a dominant position. It also maintains its grip on the production and supply chains of rare earths and key technology applications. Recognizing early on the strategic importance of critical minerals, China has been consolidating its strong relationships with developing countries where the minerals mostly originate.

In light of the PRC's advantage, major industrial nations are updating their critical minerals lists, attempting to build resilience against possible disruptions, and seeking to bring supply chains closer to home. Unfortunately, in the race to capture these resources, little attention is being paid to "planet mining" and the overall environmental and socioeconomic footprint that the extraction and processing of these minerals will have around the globe. In the United States, there is a political call to "de-Sinicize" supply chains in order to thwart China's ability to control the market for these minerals as they are vital inputs for high tech, renewables, and defense applications. Under former president Donald Trump, the

United States sought to reduce its dependence on supply networks involving China. While adopting a new tone on climate cooperation with China, President Joe Biden's new infrastructure plan has turned the decarbonization campaign into a nationalistic call to lead in the production of new green technologies.[126]

The EU has so far chosen a different tack. It eschews open confrontation while broadening its supply networks. Despite acknowledging that China has become a systemic rival, the EU signed a Comprehensive Agreement on Investment with the PRC in December 2020.[127] Moreover, in addition to unveiling a detailed plan for decarbonization, the EU has strategically chosen to cultivate networks of interdependence. In 2017, the European Battery Alliance (EBA) was formed to address the need for efficient batteries essential in transport, power, and industrial applications. The EBA brought together 400 industrial and innovation actors from the fields of mining to recycling to build a strong and competitive European battery industry. The EBA has demonstrated how it is possible for the EU to strengthen its position as a producer of technology in the new low-carbon economy, without severing networks of interdependence. In fact, Chinese and other Asian companies are already investing in Europe, finding the opportunities for collaboration attractive from a business standpoint.[128] In the fall of 2020, the European Raw Materials Alliance (ERMA) was launched. ERMA constitutes the largest consortium in the raw materials sector worldwide and is designed to support a multisourcing strategy for rare earth elements, ensure resilient supply chains, and increase European industrial competitiveness.[129] Also to keep pace with China and the United States, the union drafted a Coordinated Plan on Artificial Intelligence in 2018.[130]

These critical networks offer opportunities to enhance the EU-China relationship and to raise more politically fraught climate questions without demonizing China. The EU and China have been cooperating on climate for many years. In 2005, they launched the EU-China Partnership on Climate Change and drafted a climate change action plan. By 2007, green growth and clean energy had become a new frontier for collaboration. Of course, things have not always gone smoothly. Early optimism was tempered by the disappointment that followed the Copenhagen Climate Change Conference in 2009. There was a worry that in the end, the technological exchanges and close coordination on tackling the climate crisis had failed to alter China's position on multilateral climate change talks. In Copenhagen, China firmly upheld the principle of "common but differentiated responsibilities" in defense of the development rights and interests of the vast number of developing countries.[131] Bilateral cooperation continued, nonetheless, in a number of policy areas related to domestic emissions, low-carbon cities, carbon capture and storage, greenhouse gas emissions from the aviation and maritime industries, and hydrofluorocarbons. There has also been extensive and successful collaboration on emissions trading that led to the launch of China's national carbon market in 2021.[132]

The long history of climate engagement thus offers a solid base for Europe and China to work together to avoid sacrificing global decarbonization and digitalization initiatives on the altar of geopolitical competition and nationalistic narratives. But a few important conditions need to be met for this partnership to bear fruit. First, China must cease to actively feed into the logic of a bipolar narrative. Second, it needs to put more effort into its relationship with the EU.[133] Thus far, China has underestimated the importance of the European Union as an actor beyond the economic arena and has been disappointed in the union's

unwillingness to break with the United States in key moments of contention. Beijing expends far more energy trying to manage its relationship with Washington. For its part, Europe must come to terms with the fact that it takes a significant amount of risk and exposure to demonstrate resolve and agency on the world stage. The EU must closely manage its relations with the United States, avoid being drawn into the geopolitics of bipolar competition, and compartmentalize areas of distrust in its dealings with the PRC so that it can do what it does best: bring the parties to the negotiating table and keep the work flowing. Specifically, the EU should more rigorously pursue climate security cooperation with China and gain a deeper political understanding of ecological diplomacy.

EU efforts with China will likely run up against opposition from the United States, given its more confrontational positions toward China. The EU has proposed a new transatlantic agenda for global cooperation and specifically for a comprehensive transatlantic green agenda lining up with commitments for carbon neutrality by 2050. This agenda includes "a joint trade and climate initiative, measures to avoid carbon leakage, a green technology alliance, a global regulatory framework for sustainable finance, joint leadership in the fight against deforestation, and stepping up ocean protection."[134] Even though the EU will rightly prioritize climate cooperation with the Biden administration, it should not let the United States stand in the way of a climate-oriented partnership with China—however difficult it will be to work with the PRC on climate security and, in time, a comprehensive ecological diplomacy.

THE EU, AFRICA, AND CHINA

Since 2000, EU relations with Africa have been undergoing both dynamic institutional and organizational changes. Periodic EU-Africa summits have offered an opportunity for their leaders to gather in a more political forum.[135] The Joint Africa-EU Strategy, launched in 2007, aims to address the power imbalance so that the partnership is more equal and reflects increasing African agency. Today, the EU-Africa partnership spans a wide variety of fields, notably development, peace and security, migration, climate, energy, trade, sustainable investment and employment, education, youth, democracy, and human rights. Through the African Union, the EU is also building up its partnership with regional economic communities like the Intergovernmental Authority on Development in the Horn of Africa.

Although the EU has created multiple pathways for engagement in Africa, it confronts China at every turn because the PRC's influence has skyrocketed across the continent. Through the Forum on China-Africa Cooperation, the PRC has created a new parallel regional architecture for independent and direct dialogue with its African partners.[136] These developments have worried the EU. Nonetheless, joint EU-China engagement with African partners could help reduce growing tensions over access, as well as influence and solidify the goals of ecological diplomacy. The EU and China have already initiated a sectoral dialogue on Africa as part of their own collaborative efforts. EU-China coordination on Africa is a core part of the first of the three-pronged EU-China Summit topics of engagement under the High-Level Strategic dialogue.[137] Moreover, the 2006 European Commission document *EU-China: Closer Partners, Growing Responsibilities* highlights sustainable development and aid coordination in Africa as areas for collaboration, as well as the desired outcomes for the continent.

The structured format of the dialogue allows for flexibility and pragmatism and should be harnessed to emphasize practical climate cooperation in partnership with African states. Joint engagement should be expanded to focus more on peace and security, support for African infrastructure, sustainable management of the environment and natural resources, and agriculture and food security.[138] Existing commitments at different multilateral forums could serve as the base upon which to extend and deepen collaborative efforts.

While Europe has actively pursued engagement, the PRC has been more hesitant. China worries that full-fledged involvement within this framework might adversely impact its national interests or increase pressure to accept Western frameworks that it is not a party to. Moreover, the PRC is reluctant to risk souring relations with its African partners, who remain wary of widening Sino-European consultation and the potential for a donor cartel that would diminish their negotiating power. Still, many in civil society welcome the tripartite dialogue because it is perceived as a way to secure greater stakeholder involvement in decisionmaking.

For Africans, development remains the focus of this dialogue. Both China and other major industrial nations have endorsed the creation of the African Union Development Agency, which represents a concrete manifestation of African political will. China and countries of the Organisation for Economic Co-operation and Development (OECD) have also committed to the UN Sustainable Development Goals. Moreover, climate change has quickly become an area of focus for dialogue and increased collaboration.

However, the tripartite dialogue has so far proven ineffective. Suspicions and conflicting agendas constitute important obstacles that block tangible progress.[139] In the development area, for instance, Europe and China espouse different models. The EU designs horizontal programs focused on poverty alleviation and increasingly climate adaptation. It relies on grants and direct budgetary support. For its part, the PRC does not subscribe to the OECD's Official Development Assistance criteria. Its aid is more project-based and features a mixture of concessionary and market-based lending and has leaned more toward critical sectors of economic growth without much focus on climate change. The question is whether the EU and China can dovetail their different aid modalities, especially in the area of climate change, and do so in a way that gives African actors prime agency in social and political adjustments to climate stresses. UN initiatives may provide the best avenues for EU-China-Africa collaboration, since they include standards and norms that all parties have adhered to.[140]

For all its shortcomings, the tripartite dialogue at the very least offers a clear opportunity for Europe to reposition itself, especially in light of China's BRI, which promotes the country's conceptualization of the developing world and is a core part of Beijing's geostrategic formulations.[141] Strengthening tripartite cooperation will be key to serving Europe's wider interests. So far, the tripartite dialogue has not tangibly broached the climate-security nexus that is so vivid in Africa. The EU needs to correct this omission.

The Horn of Africa offers a salient case study for a comprehensive approach to climate security and ecological diplomacy with tripartite cooperation. Events in the Horn show that climate-related instability is mounting and threatens to derail Africa's progress, dash the hopes of young people, trigger massive waves of migration because of outbreaks of violence and food insecurity, and result in a growing number of failed

or illiberal states. Of course, coordination with other new, more energetic regional powers engaged in Africa will be important as well to further mitigate risks to the complex but delicate landscape. Gulf states (Saudi Arabia, the UAE, and Qatar), India, Iran, Russia, and Turkey are shaping the cartography, drawing maps of conflict that involve the Middle East and North Africa region, the Eastern Mediterranean, the Red Sea, the Gulf, and the Indian Ocean. No other region is in more urgent need of a wider concept of climate security and an injection of ecological diplomacy into foreign policy.

CONCLUSION

The changing international landscape, the raging climate crisis, and Europe's growing resolve to ensure that multilateralism remains the key organizing principle of the international order offers the union an important opportunity to put its ideas into practice. Much work has already been done, and Europe's global strategy reflects its changing and growing ambitions to defuse increasingly fraught relations and reimagine them. Still, to advance a broader concept of climate security and ecological stewardship, the EU needs to expand and deepen its key partnerships, particularly with China and Africa. It must counterbalance the threat of bipolarity as expressed through U.S.-China hyper competition, especially in light of the immense work that needs to be done to address the climate crisis.

CHAPTER 6

ECONOMIC REGENERATION AS A VEHICLE FOR SYSTEM RESILIENCE

JOHN ELKINGTON AND THAMMY EVANS

That Europe now needs to rebuild its economy in the wake of the coronavirus pandemic is a given—the pressing question is how this can best be done. The EU Green Deal marks a significant change in the union's vision for its economic future as it commits the region to decarbonization, ecosystem restoration, and social inclusion. But as implementation begins in earnest, the EU must consider how longer-term benefits in relation to systemic resilience and regeneration can be generated and optimized.

An economically weaker Europe will face new internal and external security risks, so the ways in which the region addresses climate- and ecology-related issues will be critical. Previous chapters in this compilation have shown that the links between recovery pathways and the security agenda also need proper, timely consideration. In particular, the trending assumption that decarbonization in the energy sector will be the primary means of jump-starting economic growth could obscure the parallel needs to secure an ecological future and address the geopolitical and human security risks inherent in a poorly executed Green Deal.

In this context, EU policymakers appear rather too comfortable with the belief that the internationalization of the Green Deal approach will be a sufficient response to wider geopolitical and human security challenges. Exporting tested Green Deal–style solutions would be a useful start, no question. But even if the Green Deal were to be fully and effectively delivered, which currently seems unlikely, it would still fall considerably short of what is needed.[142]

A new integrated economic and security paradigm is needed to guide the EU's thinking, investment, and action—a paradigm configured not just around responsibility and efficiency but also around resilience and regeneration. Interest in the concepts of resilience and regeneration has grown noticeably since the

pandemic began, but it is time to take action and rewire the union's policies, incentives, and market mechanisms so that they reinforce all three goals: responsibility, resilience, and regeneration—both at home and abroad.

The shift toward regenerative economics and economies, alongside linked macroeconomic and geopolitical policies, requires Europe to position itself internationally in ways that foster mutual ecological, socioeconomic, and security benefits. And this positioning, in turn, requires a different baseline from which to assess the design and progress of EU climate policies and geopolitical strategy. While adding new climate elements to existing approaches of the Common Foreign and Security Policy and the Common Security and Defence Policy will certainly be necessary, this step alone will not be sufficient for long-term success. Still, there are other promising ways to achieve a genuinely systemic approach, such as by embracing the regenerative economy paradigm, expanding the change agenda, and exporting the regenerative economy model.

GREEN STEPPING-STONES: TOWARD A NEW SCENARIO

It is far from certain that the Green Deal will act as a stepping-stone to broader systemic change. It is likely that the EU will take narrow incremental steps rather than designing structural solutions. In this case, the Green Deal could be left as an aspirational benchmark, designed in earlier, better times, with decarbonization discussed more than it is actually implemented. The EU needs a fundamentally different scenario from this—one of "European regeneration." Under this scenario, new types of leadership drive inclusive, clean, and ultimately regenerative growth. Virtuous cycles kick in. Expansion beyond net-zero ambitions in major economies, coupled with major state-directed investment in key sectors, opens up new markets that thrive.[143] Increased and widespread inclusion of female leadership helps spur this European regeneration.[144] The Green Deal proves to be the first stage of a fundamental reworking of the European "project" both at home and abroad. This scenario would spur rising generations to actively help put their nations, regions, and the wider world on the path to a systemic, multidimensional recovery—and ultimately a global regenerative economy.[145]

The likelihood of this scenario occurring depends not just on reimagined continent-wide frameworks, rules, and regulations but also on a new spirit of radical innovation, fearless entrepreneurship, and financial risk-taking. Achieving success would require a new economic paradigm—fit for the twenty-first century—and very different priorities in terms of how to generate wealth, value, and well-being. The scenario's ultimate outcomes, however, would increasingly be shaped by evolving power dynamics among the five dominant economic blocs: China, India, the United States, the EU, and, over time, Africa, as explained in chapter 5.[146] In a period of geopolitical reordering, these dynamics are likely to be destabilizing without stronger coordination.

It is possible to draw many different conclusions from such projections, but one trend seems beyond dispute: as the decarbonization and wider sustainability agendas become mainstream, they must increasingly influence all forms of politics. Already we see climate action being sold by some European media in terms of green nationalism. Systemic progress will only be possible if these agendas are linked

with all efforts related to security, health, and well-being (as pointed out in chapter 4). Again, the Green Deal represents a robust start, but the challenges now facing Europe are increasingly systemic—and thus demand systemic responses.

GREEN SWANS: EXPONENTIAL PROGRESS

Nassim Nicholas Taleb asserts that the challenges that drive eventual systemic change typically hit out of the blue, have an off-the-scale impact, and are then—critically—misunderstood by many of those charged with ensuring that history does not repeat itself.[147] However, the coronavirus pandemic, he concluded, was not an unpredictable event—what he terms a "Black Swan." Coronavirus outbreaks were foreseen and the risks were largely ignored—very much like the risks associated with climate and biodiversity emergencies have been.

In support of the Green Deal's "do no harm" oath, the EU should seek to leverage "Green Swans" or, in other words, profoundly positive market shifts. Although opposite to often catastrophic Black Swans, they are "generally catalysed by some combination of Black [unpredictable] or Gray [predictable] Swan challenges and changing paradigms, values, mindsets, politics, policies, technologies, business models, and other key factors."[148] At best, a Green Swan could deliver "exponential progress in the form of economic, social, and environmental wealth creation." At worst, it could achieve progress "in two dimensions while holding the third steady. There may be a period of adjustment where one or more dimensions underperform, but the aim must be an integrated breakthrough in all three dimensions."

Leveraging a Green Swan will be easier to discuss than do. Although many hope that the pandemic's aftershocks will soon fade, this decade's social, economic, and political quakes are likely just beginning and will be difficult to effectively manage. Populism has not yet run its course. And an economy built on fossil fuels is being rudely pushed into a future powered by electrons. In the process, core elements of the European economy are being disrupted. Brands like Mercedes and BMW are encountering radically different competitors—most notably Tesla but also burgeoning Chinese electric vehicle companies. An era of physics and chemistry is giving way to an era of information, biology, and ecology, in which there will be major winners and, inevitably, serious losers.

EMBRACING REGENERATIVE ECONOMICS

A united Europe that is economically thriving would be better equipped for turbulent times than one that is politically fragmented, socially fractious, and economically challenged. Europe's goals of the last century were unification, expansion, democratization, and integration. This century's challenge will be the rebuilding of economies based on technologies, business practices, and policies that are socially inclusive and—via radical decarbonization and increasingly circular dynamics—environmentally sustainable. This time, the most obvious goals are social inclusion, decarbonization, and environmental regeneration, but others will become more pressing over time, such as human security, energy justice, and ecological security (see chapter 4).

The risks involved in ignoring or discounting the drivers and triggers of this century's security and defense challenges are growing, particularly in areas where there is undue reliance on automatic U.S. intervention on Europe's behalf. The region's willingness and ability to invest in preemptive security, defense, and intelligence efforts that aim to avert conflict will be critical, as the post–World War period has been marked by increasingly troubled international relations.

To leverage relevant Green Swans in this context, the EU must pursue three priorities.

Priority 1: Embrace the Regenerative Economy Paradigm

Only through a timely, sustained, and effective push to shift the fundamentals of the European economy can the EU benefit from European regeneration. The spotlight must shift conclusively and deliberately to economic and business models that actively regenerate critical political, economic, social, and environmental systems. In short, EU member states must co-evolve a regional version of the regenerative economy,[149] stretching current circular economy formulations that have become increasingly central to policy discussions.[150]

Europe must also rise to the challenge collectively, wherever possible, with investors and business leaders, workers and trade unions, and local, national, and international government agencies pulling together. Nationalism is still very much a force to be reckoned with, and unless democratic states create a united front, populism and nationalism will further feed on the intense social and economic dislocations likely to follow the full-scale deployment of technologies like autonomous vehicles, advanced robotics, and precision fermentation of cultured proteins.[151]

Leaders of older, fossil fuel–based industries sense the coming shifts and are trying to adapt to avoid being left on "the wrong side of history."[152] Fatih Birol, head of the International Energy Agency (IEA), was recently quoted in a *Financial Times* magazine article, stating that "our [IEA] numbers show that renewables are set to become the largest source of generation by 2025, overtaking coal—and ending the fossil-fuel domination of the last decades."[153] The IEA, originally formed to expand the use of fossil fuels, subsequently suggested an end to investment in fossil fuels by 2030.[154]

The energy and resource configurations of tomorrow's economies will have huge implications for the security of most people on Earth. The more fossil energy used, history suggests, the more conflict-prone and resource insecure the world will become. To avoid this future, it is imperative to create renewable, circular energy systems; however, this will require deep and ongoing systemic assessments of risk and opportunity related to such areas as carbon leakage external to the EU.

Russia, known to "routinely play a disruptive role" in climate negotiations, is now relishing climate adaptation,[155] while many of the Gulf states are pouring their oil money into solar export research, among other things via investment in the hydrogen economy.[156] Meanwhile, the International Renewable Energy Agency underscores where the clean energy future seems to be erupting: China. The country is aided by the giant size of its domestic market and by state-directed investment in research and development and

solutions now linked to green recoveries. As a result, China is expected to "account for almost half of the global increase in renewable electricity in 2021."[157]

Accelerating the shift from fossil fuels to renewable energy is crucial but does not guarantee less violence. New points of vulnerability will emerge, such as submarine cables transporting renewable energy to foreign markets—subject to both natural hazards and to sabotage. And as the move toward renewables progresses, violence around mineral extraction (versus oil production) will likely increase. Further, accelerating decarbonization alone will not address all the fronts of the climate crisis. Europe could decarbonize industry and its cities successfully, yet still leave substantial proportions of the continent's agricultural soils locked in degenerative spirals. Some decarbonization efforts—for example, replacing woodlands or wetlands with solar farms—could also be ecologically problematic, counterintuitively displacing natural carbon sinks and destroying biodiversity.[158]

The uncomfortable truth is that European economies have often drawn on progressively larger hinterlands as empires, colonies, frontiers, and markets have expanded. Historically, much of the region's wealth was extracted, with intergenerational consequences. But the intergenerational consequences of issues like climate change and the loss of healthy soils, forests, reefs, and species globally are not only pressing in but galvanizing the public. Whatever humanity may intend, people's lifestyles are increasingly "colonizing the future," as Roman Krznaric has argued.[159] There is a risk that private enterprise and newly formed space commands, for example, will serve to colonize new planetary frontiers in the name of rare earth exploration and resource sovereignty.[160]

In addition, there are the economic challenges related to both aging and declining populations, alongside looming pressures on Europe to handle forced migration brought on by the threat multiplier of climate change.[161] Much study has been done on sectors like automobiles, aviation, chemicals, fossil fuels, nuclear energy and tourism, but much less effort has gone into exploring the economic and ecological links with conflict, defense, policing, and security. The coming climatization of security may herald the securitization of climate, in which militaries must find a regenerative role in the former rather than a degenerative role in the latter.[162]

So expect to see an accelerating convergence between the sustainability and security agendas. The security and defense sectors are becoming increasingly interested in sustainability issues related to climate change, water scarcity, and the spread of exotic diseases. And further signaling the growing overlap of these agendas, the sustainability sector is becoming increasingly interested in the links between issues like forced migration and—in the wake of conflicts that cannot be averted—economic, social, and environmental recovery and regeneration.[163]

Priority 2: Expand the Change Agenda to Include Regenerative Economics

So what would a truly regenerative economy look like? No question, it would be increasingly circular, to use today's policy mantra. But, according to the Capital Institute, it would also be resilient, sustainable, and supportive of integrated economic, social, and environmental recoveries. Market mechanisms would

remain central but would be nested within political, social, and economic systems that take longer-term and pre-financial priorities into account. One example here would be the imposition of carbon taxes and linked tariffs.

Self-regulation will be vital: "Instead of pursuing greater government regulation as the only realistic solution to markets run amok," the Capital Institute concludes, "policymakers in a Regenerative Economy understand the importance of designing incentive-driven, self-regulating systems that embody the critical balance between the freedom upon which innovation thrives and the constraints necessary for effective collaborative communities to work."[164]

Take food production, for instance. While the EU's Farm to Fork Strategy embraces agroecology to challenge industrialized organic farming, the EU has yet to capitalize on regenerative agriculture. Progress toward regenerative economics could be made by linking the strategy more holistically to the EU Biodiversity Strategy for 2030.[165] Lessons can be learned from developments in the United States, where some fast-food chains are experimenting with a shift from feed-lot cattle production, which compacts and destroys soils, to new forms of pasturing that mimic the movement of buffalo herds. As soils recover, they capture and store more atmospheric carbon, opening up the possibility of harvesting carbon credits—potentially creating virtuous regenerative cycles.

To ensure that the EU spurs market—not just business—innovation, new policy frameworks will be essential. For example, the EU could adopt a "Carbon Takeback Obligation," a policy instrument to ensure that carbon dioxide from fossil energy no longer ends up in the atmosphere.[166] It would require producers and importers of fossil fuels such as oil, coal, and gas to permanently store an increasing percentage of the carbon extracted. This can be done by, among other things, carbon capture and storage.

Critical work is now being done in the pivotal discipline of economics. Economists like Mariana Mazzucato and Kate Raworth are among those investigating new ways of thinking about value.[167] To get a better sense of what economic regeneration might involve in practice, the Green Swans Observatory, developed by Volans to help "make business sense of the regenerative economy," is also focusing on potential solutions through four lenses: cities, electricity, food, and money.[168] Futures lenses will also include education and security. The sort of questions the observatory is raising include the following: What would it take for buildings and cities to become increasingly indistinguishable from their ecological context? How could electricity supply systems move toward—and then beyond—net-zero carbon emissions? How could agricultural systems regenerate, rather than degenerate, soils and surrounding ecosystems? And how might financial markets fund the relevant transformations?

Some parts of Europe's economy may progress in good order, but there are real question marks over the region's capacity to embrace the coming flood tide of new technologies and business models. For example, there are growing concerns that the EU lags in areas like autonomous vehicles, robotics, artificial intelligence, and synthetic biology. The EU Green Deal insists that reskilling will be crucial, ideally leaving no one behind. But for many, reskilling will be fraught with structural and cultural hurdles. Educational systems must instill the ability to learn—and relearn—from an early age. Regenerative education practices enable people to nimbly self-reskill to transition into the emerging regenerative economy.[169]

Priority 3: Export the Regenerative Economy Model

Implementing the EU Green Deal will elicit unintended consequences—some good, some bad, and some ugly. The EU's relative safety nets and "do no harm" aspirations of the Green Deal can help mitigate negative outcomes internally. However, externalities (including carbon leakage, pollution displacement, and human rights infractions) abroad may well undercut any good regenerative outcomes and could exacerbate already widening climate injustices.[170] Meanwhile, the stakeholder engagement challenge has only grown, both inside and outside the EU. The move toward more socially inclusive economies that espouse local ownership (of the problems *and* solutions) requires engaging previously excluded ethnic, religious, gender, and minority groups and the poor, as well as nature itself as a legal entity or even personality.[171]

In times of economic disruption, the rewards will not simply go to the quick responders. Occasions will also arise for Europe to draw on its inclusive legacy to generate comprehensive solutions, including inclusive market opportunities abroad. In the process, the region can develop, refine, and export new models of regenerative economics. But history suggests that the ultimate winners in times like these are often those with less to lose because they are less vested in the old order and readier to experiment. And if new order insurgents increasingly outflank old order incumbents, there is a real risk that Europeans could become rule-takers rather than rule-makers. While the EU needs to keep a focus on good governance, accountability, and transparency, it should not stifle large-scale innovation through heavy-handed use of its precautionary principle.[172]

NEXT STEPS

It is clear that the responsibility-oriented measures the EU has encouraged businesses to adopt in recent decades are necessary—but no longer sufficient—conditions for the long-term success of decarbonization and economic, sociopolitical, and environmental regeneration efforts. Transparency, accountability, stakeholder engagement, and supply chain initiatives are all crucial, but on their own, they are not turning the tide on our economic, social, environmental, and governance challenges.

The EU must also work to build greater, long-term resilience into all its systems, even if it is sometimes at the expense of efficiency.[173] And, ultimately, the only way to do this is to actively restore the health of these systems—to regenerate them. Here are five early actions Europe needs to take:

1. **Make regeneration a central, stated objective:** This will require harder-edged policy instruments, including clearly stated and effectively enforced national and regional carbon budgets. It also demands a massive, sustained investment in education and reskilling. So, starting at home, how can the EU move beyond decarbonization to create tomorrow's regenerative economies? How can it actively decolonize the future, with its lifestyle-related footprints unduly constraining the choices of future generations? And how can the three-dimensional mindset of responsibility, resilience, and regeneration be infused into Europe's foreign policy, aid programs, and security systems?

2. **Prioritize multilateral solutions:** As the pressure to act on the climate emergency intensifies, the likelihood of solutions like carbon border taxes triggering trade disputes will only grow. But at a time when solutions at the level of the Word Trade Organization seem improbable, the need for clusters of countries to act in concert is increasingly clear. Europe has considerable potential leverage, economically and politically. But this needs to be carefully managed if trade disputes are not to devolve into intensifying public calls for protectionism. Achieving a climate version of the Bretton Woods agreement may seem impossible today, but then so did that 1944 outcome even a few days before the final deal was signed.

3. **Work at all levels of government to shrink "Green Premiums."** Effective government action is now make-or-break, with business leaders lobbying for action. Bill Gates, for example, notes the urgent need to drive down "Green Premiums"—the additional costs of choosing a cleaner technology—payable on climate-friendly solutions of all sorts.[174] He concludes that (1) governments can use policies to either make the carbon-based version of something more expensive, make the clean version cheaper, or, ideally, both; (2) companies and investors can commit to buying and using cleaner alternatives (such as through the RE100 initiative for renewable electricity), investing in research and development, supporting clean-energy entrepreneurs and start-ups, and advocating for helpful government policies; and (3) individuals can help create markets for better, cleaner alternatives. These efforts, he argues, "will drive investment in research, which helps decrease the price and ultimately makes clean products more affordable and available for everyone."

4. **Prioritize the ecological emergency alongside the climate one:** There is no way to stabilize the climate without restoring natural systems at a global scale. So how can the EU help regenerate biodiversity, ecosystems, and economies? What instruments can the EU use in this endeavor, from treasury to private finance and from military partnerships to civil society? And, perhaps controversially at a time of growing superpower tensions, the EU could more deeply engage with China on its vision of an ecological civilization for mutual benefit.[175]

5. **Deliver local environmental quality improvements alongside global ones:** At a time when the links between air quality and health, including mental health, are increasingly, painfully obvious, every effort must be made to ensure European citizens experience early, discernible improvements in their local environments as the region works to improve the global situation. People may like to believe that they are all in this together, but continuing—and increasingly mainstreaming—political support and investment will depend on a palpable sense that there are real returns on the short-term sacrifices individual countries make.

CONCLUSION

HEATHER GRABBE

The EU is embarking on a historic first: a plan to transform a large, industrialized economy into a sustainable low-carbon, circular one. Its ambition is laudable—and overdue—given the short ten years that climate scientists say humanity has left to make all its activity sustainable and within planetary boundaries.

However, the European Green Deal is designed for the EU's internal transition, not the rest of the world. As such, external factors are still being treated as add-ons to the EU's core climate policy, and this is causing problems in how it is being implemented and communicated globally.

The analyses in this compilation fill important gaps in policymaking that are preventing the EU from developing an effective and holistic climate security agenda. The authors explained how the EU got to this point—by primarily acting as a regulatory power that generates policy solutions as problems arise—and how its climate measures and energy policies have been too narrow so far. They then explained why setting a much wider agenda of ecological diplomacy to achieve environmental sustainability and regeneration is so vital. The authors shed light on the links between security and conflict, ecosystems and decarbonization, and the current economy and future systemic change.

The message to policymakers is very clear: climate security is essential for the EU to achieve its fundamental goals, both internal and external, but it will require the EU to transform its deeply embedded policy paradigms and institutional structures. There are four important lessons for those responsible for the European Green Deal and those involved in formulating foreign, security, and defense policies:

1. **Policy incoherence is a strategic problem for the EU.**

To create interlinked policies that will deliver climate security, the EU will need to build much deeper connections between the institutional silos that set policies on energy to trade to conflict intervention. Each part of the policy machine has its own logic and culture, underpinned by assumptions about how the world works and what role the EU should have—and these assumptions are often not aligned.

In regard to the EU's environmental and climate policies, this incoherence has created two major blind spots: one is the direct external effects that the European Green Deal will have in the rest of the world and the other is how the EU's economic model and policies generate conflict drivers in other regions. This inability to join up policy issues and institutions puts the EU at a strategic disadvantage in preparing for a future role in a climate-changed world.

With respect to its external policies, the EU has progressively moved climate risks to the center, evidenced by the noticeable shift of focus in its successive security strategies. But as several authors noted, policymakers have been treating climate and environmental problems as exogenous risks, not taking into account how the EU itself is increasing climate risks through over-consumption and a market-centered approach to trade and development. The EU needs to pay attention to the drivers of conflict from environmental degradation, which have effects way beyond carbon emissions. Even if carbon emissions stopped today and there were no rise in global temperatures, the disruptions to hydrological cycles that are already happening in many regions because of deforestation will cause suffering, conflict, and massive displacement of people.

In regard to conflict interventions, the EU is still focused on physical resource scarcity. Its development cooperation aims to increase the supply of physical environmental goods (for example, food and water)—without much attention to the politics and governance around this supply in various regions. Policy thinking needs to go beyond the technical, physical side to understand how interventions themselves can create the potential for conflict (for example, because the value of land goes up when water supply infrastructure is built).

Meanwhile, if the aim is to be a geopolitical Europe—the ambitious goal that European Commission President Ursula von der Leyen set for her term—the EU needs to integrate climate into its core approaches to geopolitics and geoeconomics. That means, for example, working with China on climate (even if the United States remains reluctant to do so), addressing climate justice across the Global North and South, and moving toward a regenerative economy. To achieve all these objectives, the EU needs to expand its technical and internal focus on environmental policy and adopt a holistic view of the global ecosystem.

2. **The EU has to become more than a regulatory power and refrain from trying to retrofit geopolitics and security agendas.**

The limitations of EU policy thinking on climate are unsurprising given the nature of the beast. The EU is fundamentally a regulatory power whose core policies and competences grew around the goals of market creation and regulation. External policies have been retrofitted into this regulatory machine, often creating an incoherent mix of mindsets and policy logics.

Climate policies have also been retrofitted, and some policies—related to development, for instance—are more resistant than others to change in response to its rise in salience. The EU's development aid and international partnerships need to evolve fast in response to changing situations, especially in Africa.

EU leaders have presented the European Green Deal as a global public good as well as a means of maintaining the competitiveness of European firms in the growing markets for green products and services. To an extent, the Green Deal is indeed a global public good because it will more than halve Europe's carbon emissions, but that will only amount to around 5 percent of global emissions. Ultimately, the EU may have a greater global impact through setting international regulations and norms; Europe is the first mover toward repricing economic activities and accounting for its environmental impact.

If the EU's efforts are successful, other regions may follow suit, most importantly the other giant carbon emitters, the United States and China. Other regions may adopt parts of the European model for their own transitions, as well as the union's norms and standards, similar to what is occurring in area of digital protection. But if the EU fails, leaders in other countries will be reluctant to make bold moves. Thus, the overall philosophy of the Green Deal matters for the global transition, not only the specific measures that the EU adopts.

Climate security is the kind of long-term meta-issue that the EU should be good at addressing. The pandemic has revealed once again the EU's failings in short-term crisis management, as it requires agreement between multiple institutions and governments. But the EU is better than national governments at long-term planning and large-scale, multiyear projects, as evidenced by the Single Market Programme. The question is whether the union can achieve the same scale of success beyond its own continent by setting the pace for the global climate transition.

3. **While implementing the Green Deal at home, the EU needs to promote systemic change globally.**

Given humanity's need to transition to a fully sustainable economy within the next decade, the European Green Deal is just a stepping-stone to broader system change. To pursue a holistic approach that provides long-term climate security, the EU will need to embrace economic regeneration as a means of creating system resilience.

For example, a focus on the taxonomy of investments and design of the EU's proposed Carbon Border Adjustment Mechanism will be important for measuring the environmental impact of investments in Europe and preventing carbon leakage to other regions, but ultimately, it needs to lead to a global valuation system for all investments and every part of the global supply chain. There is only one planet, so Europe's green transition also depends on changing how goods are produced and traded across the world.

The EU needs to find ways to apply the protection of habitats in its external policies. The European Green Deal has started repricing the European economy, and now it needs to change the economic model that fails to value nature outside the EU as well.

4. **In pursuing international climate diplomacy, the EU should be modest and recognize its historical responsibility.**

Better communication of the EU's ambitions for climate is vital to getting other regions on board. After a year of vaccine debacles and massive disruption of life in every region, there is repair work to be done before agreed-upon collective action on climate can begin. At the forthcoming climate summits, it will be hard to ask for bigger commitments from countries that are still in the midst of battling the pandemic and dealing with insufficient vaccine doses even for their essential workers, overwhelmed healthcare systems, and rising levels of sovereign debt.

Viewed from outside, it would be easy to see the Green Deal as a plan to create a beautiful green island of clean cities in Europe while exporting dirty production and waste to poorer regions. And the EU's attempts to prevent such export of dirty production, notably through the Carbon Border Adjustment Mechanism, are seen in many parts of the world as protectionism in a green wrapper.

The world is watching the European Green Deal and assessing whether it is a good model and whether the transition to net zero can be fair and inclusive (which is the only way to achieve the behavioral change that is needed to make human activity on this planet sustainable). If Europe wants the rest of the world to follow its example, it needs to address the economic, social, and ecological gaps between the Global North and South that have widened during the pandemic. As the source of a significant share of the greenhouse gases already in the atmosphere after centuries of industrialization, Europe has a responsibility not only to lead the change in its own economies but also to support other regions in making the transition and to reset the global architecture for international cooperation.

The systemic change has to be global because of the deep ecological interdependence of all parts of the Earth. There is also only one climate, so emissions cannot be "exported" and then not count. Similarly, an ecosystem collapse in one region has serious consequences for other regions. It is time for the EU to strive for a broader ecological security, which requires coherent, linked policies, both internal and external, and a comprehensive strategy to promote the global systemic change necessary for lasting security.

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