



GDI ISSUE PERSPECTIVE: CLIMATE AND ECOSYSTEMS

WHY IT MATTERS:

We have one planet, whose complex and fragile ecosystems form a thin layer—the biosphere—that stretches from the deep oceans to the lower atmosphere. The industrial era has brought unprecedented growth in the length and quality of our lives. It has also involved the misuse of great swaths of land and widespread use of fossil fuels, plastics and chemical fertilizers. Collectively, these are planet-scale alterations to a complex, non-linear ‘system of systems’ that has strong, in-built inertia. We know that our agriculture, industries, transport and energy are already likely to have ensured massive, self-reinforcing and potentially irreversible changes to the Earth’s climate and ecosystems. The costs to future generations and other species are incalculable and go far beyond reductions in economic growth, substantial and far-reaching as those will be (a recent report predicted global GDP costs of at least \$480B a year¹). We are confronting dangerous rises in sea levels, mortality, water stress, famine, displacement, migration, conflict and species extinction. The pathway we are on is such that, within their lifetimes, our children could see New York, Shanghai and Rio de Janeiro under water, Italy and Greece as deserts, and corn and wheat yields 30-40% lower than today. GDI believes that our obligation is clear: to return the Earth’s habitats and systems to norms that will allow this generation and those that follow it to live justly and sustainably within the planet’s natural boundaries.

This broad framing – “biosphere restoration” – supports a systems mentality and a search for broad, interlinked solutions that include but go beyond emissions reduction and climate adaptation.

THE CURRENT STATE / THE OPPORTUNITY:

GDI recognizes the immensity of the technological, financial and political challenges involved in biosphere restoration. Acknowledging these realities, our approach is to find and work with leaders and fundable concepts that will advance biosphere restoration by combining sound science with a bias to action.

Global heating is the preeminent challenge to the biosphere. Most discussions of solutions to address climate concerns rest on two pillars: mitigation (emissions reduction) and adaptation. These have been the focus of great amounts of political and philanthropic capital to date and are being worked on by many actors; the UN-led movement to address global warming is still primarily focused on emissions reduction. GDI sees areas within mitigation and adaptation that are ripe for evidence-based approaches that scale or mechanisms that advance existing approaches, challenging much global inertia. And, there is a third pillar—restoration—that presents grounds for optimism. GHG *removal* is essential on any conceivable pathway to stabilize the climate. Opportunities lie in efforts to restore the critical land and ocean ecosystems that sequester gigatons of carbon and to reverse other forms of anthropogenic pollution such as plastics waste and nitrogen runoff. These will require testing and scaling several very large interventions—some that may have revenue models (like carbon negative building materials), and some that will require substantial public funding. We believe that GDI can contribute most effectively to pioneering initiatives in these fields by remaining deeply focused on our core competency of building transformative ventures by combining great talent, great ideas and smart funding mechanisms.

¹ <https://www.panda.org/2359334>

We will therefore prioritize initiatives that we believe will differentially accelerate the transition to 'Net Zero' emissions or otherwise repair the Earth's biosphere, and which GDI is well-equipped to support. Specifically, we will prioritize: (1) ambitious non-profit initiatives that can only succeed through the interaction of multiple stakeholders; (2) innovative funding mechanisms; and (3) where sufficiently practical and impactful, the use of market-based mechanisms that fit with the grain of our economic and political systems.

GDI's WORK:

Climate is GDI's newest focus area. Given its importance globally, GDI is eager to apply its model to the issue. Examples of initiatives we are incubating or exploring can be understood within the three main approaches to climate and ecosystems:

- **Mitigation.** We are investigating ways to get involved in areas of emissions reduction that have been under-addressed. One way is WASH. Aside from its huge health costs, poor sanitation contributes significantly to GHG emissions through anaerobically-produced methane from the pit latrines on which a quarter of humanity still rely (methane is around 200 times more potent than other GHGs). We are exploring an initiative to catalyze the expansion of proven enterprise-based approaches to offering improved, *climate-smart sanitation* in urban areas in emerging markets.
- **Adaptation.** We are beginning to explore opportunities to catalyze *job-creating 'green growth'* in emerging markets through, for example, restorative agriculture and programs to reverse desertification. We are also working with colleagues from T² on a promising approach to create jobs and create a market for a *carbon-neutral coal substitute* for invasive biomass in India.
- **Restoration.** GDI is incubating an innovative non-profit, [Emergent](#), that will deploy substantial public funding, principally from the Norwegian government, to catalyze large and sustained flows of private sector capital into *forestry carbon credits*. If tropical deforestation was a country, it would be the third largest contributor to net emissions after the US and China. We believe that the Emergent team and business model can play a pivotal role in reversing deforestation at national and regional scale by making forests worth more alive if they are kept intact. We are also exploring support for a new center housed at a world-class academic institution. This team would work closely with innovators and entrepreneurs to identify, pilot and scale promising approaches to *large-scale removal of greenhouse gases*, and to other biosphere challenges such as restoration of arctic ice and marine ecosystems. Finally, GDI is supporting cutting-edge attempts to develop a plastics offsetting mechanism that would allow large corporations to legitimately move closer to plastic neutrality and channel funding to the *removal of pre-ocean plastic*. We are also investigating ideas to harness the power of markets and blended finance in order to boost waste plastics collection and recycling capacity in areas where it is fundamentally lacking. The intent is to focus on a dozen or so hotspots around the world—Egypt, the Philippines, Indonesia—where large population centers, major rivers and limited waste infrastructure combine to propel millions of tons of plastic into the oceans every year.