



2021

Domini forest focus seeks to address the challenge of global deforestation and reforestation, as is appropriate in our role as a fiduciary. To delineate how the work is compatible with this duty, we have posed and answered the following four questions:

 **Consensus** - Has this challenge been subject to widespread analysis resulting in a reasonable global consensus as to its importance in the maintenance a stable, sustainable, and productive environment and society?

 **Effectiveness** - Do we have the experience, expertise and resources to achieve material, positive impact?

 **Relevance** - Is this challenge material to our investment decision-making and returns across all asset classes?

 **Uncertainty** - Do this challenge's fundamental uncertainties require the application of tools beyond those of traditional risk management—i.e., beyond portfolio diversification, hedging techniques, etc.?

*See Report Section 4 for the answer to the Consensus and Effectiveness questions*



## RELEVANCE

*Is this challenge material to our investment decision-making and returns across all asset classes?*

**Forests pose material risks and offer potential rewards across the two asset classes that Domini invests in: public equities and fixed income.**

Domini has a duty to monitor risks and create value for its shareholders. Deforestation is occurring at a scale that is a macro-risk to our investments across asset classes and could threaten the global economy. We have analyzed our portfolio exposure to deforestation and use of forest services. Our findings demonstrate the relevance of forests to our operations.

### INFORMATION-SHARING THROUGH WHITE PAPERS, ISSUE BRIEFS, IMPACT REPORTING

Today, a negative reinforcing dynamic in forest-related systems is generating progressively worse outcomes relating to fresh water, local and global climate, biospheric integrity, rural and Indigenous livelihoods, and nutrient cycling systems. Our activities in these areas are regularly documented through publication of our Impact Reports and Updates on our website.

Considering the broader systems dynamics of sustainability challenges helps us to identify forward-looking companies that are cognizant of risks and working to preempt them. We believe sustainability strategies provide a good indicator of strong management that can enhance firms' long-term financial performance. System analysis can also help us identify where in the system to invest in solutions to emerging challenges. Furthermore, investing with the aim of long-term value creation sows the seeds for own future investment returns. Internally, building that capacity to understand challenges from a systemic view enhances our ability to think strategically and plan for the long term.

## FOREST LINKAGE ANALYSIS

Industries have different degrees and types of exposure to the systemic risks related to forests, largely based on how directly linked their business model is to forests products, other ecosystem services provided by forests, and deforestation.

In our analysis, we defined four categories of linkage based on proximity to the firms' impact and dependence on forests. Each of these four has different forest-risk profiles, and differing degrees of ability to have a positive impact on forests. The categorization illustrates the degree to which forests are linked to the core business of the industry. The linkage may be a need for forest products or services, i.e. forest value, or a negative, value-destroying effect on forests, or both.

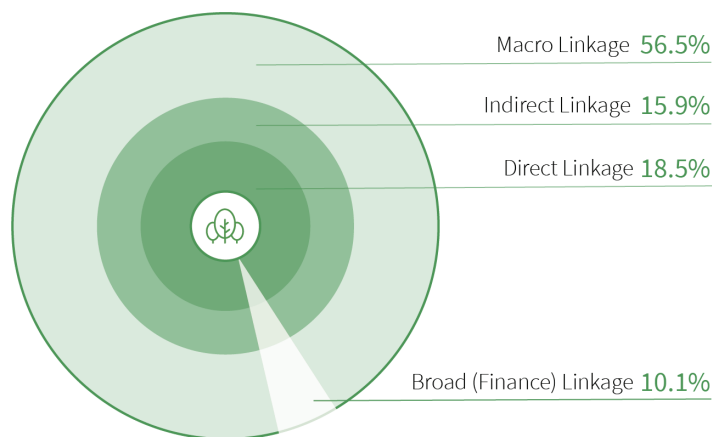
All four types of industries rely broadly speaking on the regulating and supporting services from forests, particularly mitigation of climate change. In the two categories of direct and indirect linkage the ties to forests are more immediate, and are subdivided into three groups: *impact*, those that mainly cause deforestation (i.e. mining), *depend*, those that need services or resources from forests but don't cause deforestation (i.e. the pharmaceutical industry), and *impact & depend*, those that both cause deforestation and need ecosystem services or products from forests (agricultural companies, timber producers). Based on this categorization, we determined which types of interventions would be most effective in addressing systemic risks to the industries in each category. We believe companies in the *impact & depend* category have a particular impetus to act on forests, as they stand to undermine their own operations.

### DIRECT LINKAGE

*Directly linked* industries either directly source forest products, meaning they rely on the provisioning service of the ecosystem, or directly contribute to deforestation, or both. Provisioning services are the food, fresh water, raw materials, and genetic and medicinal resources that are sourced from nature. The direct connection between forest value and these industries is certain, and therefore risks to forests may be possible to translate into prices for companies in these industries. The pulp and paper industry, for example, is an *impact & depend* company as it both impacts forests through its management practices and depends on them to create its products. We believe these companies should help create industry-wide standards and initiatives, such as supplier violation suspension protocols and supply chain monitoring. Directly linked companies also includes *impact* companies that only cause deforestation, such as mining companies. The incentive to act on deforestation does not come from business model risk, as it does for companies that depend on forests. Instead it comes from reputational and legal risk from being involved in deforestation, with a potential tie to a company's climate strategy. These companies often have the most direct ties to deforestation and therefore the most ability to halt it. Finally, *depend* companies, such as pharmaceutical companies that source compounds from the forest, need healthy forests, but must develop novel means to protect them in conjunction with other actors, since their own operations don't have negative effects on forests.

### INDIRECT LINKAGE

*Indirectly linked industries* rely on forests and forest products in some parts of their business but are at least one step removed from the sourcing of products or from deforestation. Food retailers are a sub-industry that fits this category. These companies' leverage for action on forest often involves sourcing standards and pressure on suppliers. The impact, depend, and impact & depend categories are relevant for these companies, and justify the case and leverage for action on deforestation.



*The relationship between forests and linkage categories. Percentages are the proportion of Domini's portfolio companies that fall into each category. Directly linked companies have the closest relationship to forests, while macro category companies are linked to forests by their effects on the climate. The broad, finance linkage category spans all types of linkages.*

## MACRO LINKAGE

Industries with a macro linkage to forests will be impacted by disruptions to the climate and other biogeochemical processes from loss of regulating and supporting ecosystem services that forests provide. These include all industries without the other types of linkages.

These industries depend on a stable global climate with predictable rainfall and temperature patterns, and are adversely affected by extreme weather events, lack of clean water, or by geopolitical instability caused by these disruptions. Climate change can affect all geographies, industries, and asset classes. Climate can impact assets and supply chains, both currently because of more frequent and severe weather and in the long term in wider-ranging, fundamental changes. These physical risks may in turn increase firms' exposure to financial challenges such as loss of profits, default on debt, and legal liabilities. Additionally, transition risks—including disruptions in employment, public policy uncertainty, potential for legal damages, risk of stranded assets, and reputational risk—can also contribute to volatility across all asset classes, as well as lower economic growth.

## BROAD LINKAGE (FINANCE LINKAGE)

Financial institutions are linked to forests in many ways, direct and indirect. Diversified financial services firms, primarily insurance companies, may own forests directly; others may lend or have ownership in companies that either rely on forest products or cause deforestation; all are affected by regulating and supporting services of forests, particularly those impacted by climate change, a primary concern for the property and casualty and re-insurance industries. We view financial institutions, with these multi-layered linkages as a separate category; effective ways to address these firms' impact on forests can be tailored to their individual pattern of linkage.

To determine what type of system-related interventions are appropriate, we began by applying the linkage categories to our proprietary sub-industries. We then calculated the percentage of our holdings and approved universe that fell into each of the four types of linkage: direct, indirect, macro and broad. Our interventions will vary from one linkage category to another.



## UNCERTAINTY

*Do this challenge's fundamental uncertainties require the application of tools beyond those of traditional risk management—i.e., beyond portfolio diversification, hedging techniques, and the like?*

**The long-term environmental and economic implications of deforestation at current rates are highly uncertain. It therefore constitutes a systemic risk not susceptible to conventional portfolio risk management techniques.**

Due to their unpredictable nature, the system-level implications of continued deforestation are fraught with uncertainty. The use of scenario analysis is one means to understand and plan within this context of uncertainty.

## INVESTMENT IN AN UNCERTAIN FUTURE

Passing planetary-boundary thresholds for maintenance of a stable and resilient environment can result in dire, rapid, and unpredictable changes. Loss of forests is a contributor to land-use changes that have pushed global systems into a “zone of uncertainty” and biodiversity loss into a “high risk” level, according to the Stockholm Resilience Centre. Moreover, increasing risks in one biosystem can impact other systems in complex and unpredictable ways. Deforestation, for example, can influence not only biodiversity,

but global warming, shifts in rainfall and temperature patterns, and human health e.g. COVID. Regime changes—shifts from one type of ecosystem to another, from a kelp forest to a sea urchin barren, for example—could occur as a non-linear result of drivers like deforestation and pollution.<sup>1</sup> These thresholds for regime change are hard to predict, and once they occur may be irreversible.

Over the past several decades, we have denuded the Earth of almost half of its forests and this trend is continuing. Simultaneously, atmospheric concentrations of greenhouse gases have risen at an unprecedented rate. The globalized economy and the internet have generated an unparalleled degree of globally connectivity and complexity. This mixture has given rise to many complex and interconnected challenges and unpredictable environmental and social macro-risks.

## FINANCE AND UNCERTAINTY

Traditional financial valuation is unable to account for the degree of uncertainty involved with rapid forest loss and its concurrence with other unprecedented biogeochemical and ecological changes. Deforestation is recognized as a global risk, but there are differences of opinion surrounding its importance, linkage to other risks, who is responsible for mitigation, and the best means of addressing unsustainable systems dynamics and outcomes, including biodiversity loss and climate change. Furthermore, although forests are understood as stores of value, their actual worth and the means of accounting for ecosystem services, especially in valuation exercises and decision making, are widely debated. As delineated in Constanza et al. (2014)<sup>2</sup> a variety of acceptable valuation methods for such environmental services exist and can be selected based on their intended use. These potential financial valuations, however, range in magnitude and the mechanisms for their realization to such a degree as to be of little practical use for investors in their daily decision-making.

## COPING WITH UNCERTAINTY

Crossing planetary boundaries has the potential to create changes of unprecedented speed and scale with systemic risks that are difficult, if not impossible, to quantify. Scenario planning is one helpful means for conceptualizing such systemic risks and evolving strategies of potential use for coping with potential challenges as circumstances evolve.<sup>3</sup> The Taskforce on Climate-related Financial Disclosure has endorsed scenario analysis in contending with the uncertainty of global warming. This approach is similarly appropriate for contemplating the impacts on the economy and investments across asset classes under differing futures for the forests of this world.

### Endnotes

1 Hughes T.P. et al., (2013) Multiscale regime shifts and planetary boundaries, Trends in Ecology and Evolution, vol. 28, no.7.

2 Costanza, Robert, Rudolf de Groot, Paul Sutton, Sander van der Ploeg, Sharolyn J. Anderson, Ida Kubiszewski, Stephen Farber, and R. Kerry Turner. "Changes in the global value of ecosystem services." Global Environmental Change 26 (2014): 152-58. Accessed October 2, 2020. <https://doi.org/10.1016/j.gloenvcha.2014.04.002>.

3 See Schwartz, P. (1996), The Art of the Long View, Crown Business.

For more information please visit [domini.com](https://domini.com)

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**The market value of Fund investments will fluctuate and you may lose money. DSIL Investment Services LLC, Distributor 9/22**