



**Taskforce on Nature-related
Financial Disclosures**

**The TNFD Nature-related
Risk and Opportunity
Management and
Disclosure Framework**

Beta v0.3 Annex 3.2

**‘Illustrative Indicators for
Nature-related Risks and
Opportunities**

November 2022

Annex 3.2: Illustrative Indicators for Nature-related Risks and Opportunities

Nature-related risk categories

	Nature-related risk	Magnitude indicators (illustrative)
Physical risk – acute or chronic	<p>Changes in the state (condition and/or extent) of ecosystems on which the organisation is dependent on or has an impact¹ (e.g. soil condition, water condition, air condition), resulting in changes to the flow of ecosystem services. For example:</p> <ul style="list-style-type: none"> • Changes to the supply of natural inputs (provisioning services) (e.g. water resources, timber, plants, natural gas, sediment, minerals) • Changes to protection from natural hazards (e.g. floods, landslides, drought) due to change in hazard mitigation services • Changes in other regulating and maintenance ecosystem services (e.g. carbon sequestration, light and noise pollution mediation, timing of water, waste treatment, pollination) • Changes in recreational value of area (e.g. attractiveness) 	<ul style="list-style-type: none"> • Increased costs of natural inputs/ reduced supply • Increased capital expenditure on infrastructure repair (e.g. due to loss of ecosystem resilience) • Increased capital expenditure on adaptation (e.g. mechanical or hand pollination, protection against floods) • Reduction in revenue due to interruption of operations/supply chain • Increased costs due to interruption of operations/supply chain, including reduced productivity and natural disasters • Write-offs and early retirement of existing assets • Restoration costs • Costs associated with the relocation of operations and suppliers • Costs related to substituting existing products/services • Value of assets/revenue dependent on area • Number of locations/business lines/ facilities exposed • Insurance costs



This work is licensed under a Creative Commons Attribution 4.0 International License.

¹ Caused either by business activities or external influences, including natural disasters – see impact drivers section of the beta v0.2 release

Nature-related risk categories (continued)

	Nature-related risk	Magnitude indicators (illustrative)
	Changes to species the organisation is dependent on (e.g. composition, population size, level of connectivity associated with species ranges) ² resulting in changes to the flow of ecosystem services provided	
Transition – policy and legal	Changes to legislation/ regulation aimed at achieving nature-positive outcomes/ reducing negative-nature outcomes (e.g. trade restrictions, taxes, permits and allocations, protected areas / OECMs ³)	<ul style="list-style-type: none"> • Increased costs of operations and inputs • Increased costs of personnel and monitoring of activities required • Increased compliance costs • Increased fines and penalties • Increased capital costs • Clean-up costs
	More stringent nature-related reporting obligations	<ul style="list-style-type: none"> • Losses due to delays in operations/ permit denials • Write-offs and early retirement of existing assets • Reduced revenue due to reduction in production capacity/loss of license of operate • Costs related to substituting existing products/services/processes • Costs related to the loss of operating areas
Transition risk – market	Shifting customer/investor values or preferences to products and/or services that are nature-positive/have lower impacts on nature	<ul style="list-style-type: none"> • Reduction in revenue due to lower demand for products and services • Increased production/raw material costs • Loss of market access • Costs related to substituting existing products/services • Loss of market share and investor goodwill • Reduction in asset value/value of stranded assets
	Volatility/changes to costs of materials	
	Stakeholder conflicts e.g. due to competition for ecosystem services	

² Caused either by business activities or external influences, including natural disasters – see impact drivers section of the beta v0.2 release

³ OECMs - Other Effective Area Based Conservation Measures

Nature-related risk categories (continued)

	Nature-related risk	Magnitude indicators (illustrative)
	Decline in brand and value proposition due to nature-performance being perceived worse than competitors	
Transition risk - reputation	Changes in sentiment towards the organisation/brand due to impacts on nature	<ul style="list-style-type: none"> • Reduction in revenue due to lower demand for products and services • Increased costs due to increased employee turnover/strikes • Increased operational costs due to reduction in loyalty of suppliers or stakeholders • Costs related to substituting existing products/services
Transition risk - technology	Requirements to transition to more efficient, resilient and less environmentally damaging technologies (e.g. precision agriculture, protein technologies)	<ul style="list-style-type: none"> • Increased expenditure for research and development of new and alternative technologies • Increased costs of operations required to achieve nature-related goals • Lack of access to technology developed by a competitor resulting in higher operational costs
	New monitoring technologies used by regulators and other stakeholders	<ul style="list-style-type: none"> • Write-offs and early retirement of existing assets • Costs related to substituting existing products/services

Nature-related business performance opportunity categories

	Nature-related opportunity	Magnitude indicators (illustrative)
Resource efficiency	Transition to processes with increased positive impacts on nature, including those with: <ul style="list-style-type: none"> • Increased efficiency • Reduced resource extraction (e.g. water, timber, plants, natural gas, minerals, other) 	<p>Reduced operational and compliance costs</p> <p>Reduced exposure to raw material and natural resource price volatility</p> <p>Increased resilience to reduction in availability of natural resources</p> <p>Increased market valuation through resilience planning</p>
	Transition to efficient and circular production systems and value chains	Reduced capital/infrastructure costs
	Adoption of resource efficiency/circularity mechanisms that reduce dependencies and impacts on nature	Tax benefits for certifications (e.g. payments for ecosystem services)
	Diversification of use of nature-related resources (e.g. use of different plant species)	
	Adoption of nature-based solutions within service and product lines	
Products/ services	New business model/activities with positive impacts on nature/reduced negative impacts on nature, including: <ul style="list-style-type: none"> • Resource-efficient products and services • Efficient and circular production systems and value chains (e.g. with improvements in natural resource use, emissions and waste) • Innovations that reduce impact of other sectors (e.g. precision farming tools) • Nature-positive products and business models that benefit nature (e.g. soil replenishing seeds, seaweed farming) • Products and services that utilise/create nature-based solutions (e.g. products capitalising on certified sustainable wild plant collection) 	<p>Increased resilience due to business diversification</p> <p>Increased resilience to reduction in availability of natural resources</p> <p>New revenue streams</p> <p>Reduced costs of raw materials and production inputs</p> <p>Increased revenue due to better competitive position</p> <p>Increased market valuation through resilience planning</p> <p>Reduced capital/infrastructure costs</p>
	Development of nature-positive financial solutions (e.g. nature-related insurance risk products)	

Nature-related business performance opportunity categories (continued)

	Nature-related opportunity	Magnitude indicators (illustrative)
Markets	Access to new and emerging markets	Increased revenues/reduced operational costs Access to new sources of finance Increased resilience due to business diversification
	Access to new assets and locations	Increased revenue due to better competitive position Increased market valuation through resilience planning
Capital flow and financing	Access to nature-related green funds, bonds or loans	Access to new sources of finance Access to capital for high-risk projects
	Use of financial incentives for suppliers to improve nature and ecosystem management	Reduced operational costs (suppliers)
	Use of public-sector incentives (e.g. biodiversity credits, payments for ecosystem services)	
Reputational capital	Collaborative engagement with stakeholders at local, national and international levels	Increase in revenue due to improved reputation Reduced costs due to decrease in employee turnover
	Actions that create positive changes in sentiment towards the organisation/brand due to impacts on environmental assets and ecosystem services that have impacts on society and local economic capabilities.	Increase in brand value Reduced costs due to engagement of suppliers and stakeholders

Nature-related sustainability performance opportunity categories

	Nature-related opportunity	Magnitude indicators (illustrative)
Ecosystem protection, restoration and regeneration	Direct restoration, conservation or protection of ecosystems or habitats	Increased resilience, e.g. to natural disasters
	Indirect restoration, conservation or protection of ecosystems or habitats , e.g. through: Financing NGOs/charities Reducing impact drivers/pressures Advocacy	Reduced capital/infrastructure costs Avoided fines/penalties Reduction in operational costs due to improved readiness and response to regulatory changes Increased market valuation through resilience planning
	Protection/conservation of native threatened species	Transmission mechanisms to business performance benefits:
	Implementation of site-based nature-based solutions	• Markets
	Investment in nature-positive infrastructure	• Resource efficiency
	Integrated multi-stakeholder action at land/seascape/river basin/jurisdictional scale	• Reputational capital
	Actions to improve ecological connectivity of land, basin and seascapes-based solutions	• Capital flow and financing
Sustainable use of natural resources	Transition to processes with increased positive impacts on nature, including those with: • Reduced resource extraction (e.g. water, timber, plants, natural gas, minerals, other) • Reduced pollution and waste	Transmission mechanisms to business performance benefits: • Markets
	Increased reuse and recycling of natural resources	• Resource efficiency
	Adoption of nature-based solutions within service and product lines	• Reputational capital
	Certification for projects/products/services	• Capital flow and financing
	Actions that create positive changes to the supply of natural resources that are inputs to production i.e. provisioning services (e.g. water, timber, plants, animals)	



www.tnfd.global