MSCI ESG Ratings
Methodology: Biodiversity & Land Use Key Issue

MSCI ESG Research LLC
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Introduction

This document provides information on the components of the Biodiversity & Land Use Key Issue. Biodiversity & Land Use is a Key Issue in the Environment Pillar of the MSCI ESG Ratings model. Companies are evaluated on the potential impact of their operations on biodiversity in their areas of operation and their efforts to manage the environmental impact of their operations.

For additional details on the MSCI ESG Ratings Model, refer to Section 2, Data, ratings and scores, of “ESG Ratings Methodology.”

Exhibit 1: MSCI ESG Key Issue hierarchy

<table>
<thead>
<tr>
<th>3 Pillars</th>
<th>10 Themes</th>
<th>35 ESG Key Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Climate Change</td>
<td>Carbon Emissions</td>
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<td></td>
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<td>Climate Change Vulnerability</td>
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<td></td>
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<td>Financing Environmental Impact</td>
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<tr>
<td></td>
<td></td>
<td>Product Carbon Footprint</td>
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<tr>
<td></td>
<td>Natural Capital</td>
<td>Biodiversity &amp; Land Use</td>
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<tr>
<td></td>
<td>Pollution &amp; Waste</td>
<td>Raw Material Sourcing</td>
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<td></td>
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<td>Water Stress</td>
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<tr>
<td></td>
<td>Environmental Opportunities</td>
<td>Electronic Waste</td>
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<td></td>
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<td>Packaging Material &amp; Waste</td>
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<td></td>
<td></td>
<td>Toxic Emissions &amp; Waste</td>
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<td></td>
<td></td>
<td>Opportunities in Clean Tech</td>
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<td></td>
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<td>Opportunities in Green Building</td>
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<td></td>
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<td>Opportunities in Renewable Energy</td>
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<tr>
<td>Social</td>
<td>Human Capital</td>
<td>Health &amp; Safety</td>
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<td>Human Capital Development</td>
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<td>Labor Management</td>
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<td>Supply Chain Labor Standards</td>
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<td>Product Liability</td>
<td>Chemical Safety</td>
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<td>Consumer Financial Protection</td>
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<td>Insuring Health &amp; Demographic Risk</td>
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<td></td>
<td>Stakeholder Opposition</td>
<td>Privacy &amp; Data Security</td>
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<td>Product Safety &amp; Quality</td>
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<td>Responsible Investment</td>
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<tr>
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<td>Social Opportunities</td>
<td>Community Relations</td>
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<td>Controversial Sourcing</td>
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<td>Governance</td>
<td>Access to Communications</td>
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<td>Corporate Governance</td>
<td>Access to Finance</td>
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<td></td>
<td></td>
<td>Access to Health Care</td>
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<td></td>
<td></td>
<td>Opportunities in Nutrition &amp; Health</td>
</tr>
</tbody>
</table>
### Risks and opportunities associated with this Key Issue

- Loss of license to operate
- Litigation by landowners and other affected parties
- Increased costs of land protection and reclamation

### Biodiversity & Land Use Key Issue Score

The overall Key Issue Score is based on the Exposure Score and the Management Score using the formula below. The Exposure Score and the Management Score are combined such that a higher level of exposure requires a higher level of demonstrated management capability in order to achieve the same overall Key Issue Score.

\[
\text{Key Issue Score} = 7 - \max(\text{Exposure Score}, 2) - \text{Management Score}
\]
Management Score category: Policies & disclosure

- Works with credible external stakeholder groups to verify sustainable practices
- Scope of the industry or international standard used
- Clear policy on:
  - Sustainably managing natural resources and raw material use
  - Minimizing disturbance from operations
  - Reclaiming habitat, disturbed land
- Scope of the policy (or policies)

Management Score category: Programs & structures

- Restoration or rehabilitation activities in disturbed areas of operation
- Efforts to minimize disturbances from operations
- Programs to protect natural ecosystems
- Biodiversity and community impact assessment:
  - Biodiversity impact assessment prior to settling in new areas

Management Score category: Performance

- Demonstrated track record of minimizing disturbances from operations
  - Oil spills (year, volume, intensity, trend)
  - Fresh water used (year, volume, intensity, trend)

Controversies

A controversy deduction ranging from 0 to 5 points is subtracted from the overall Management Score, based on the severity and type of controversies facing the company on this Key Issue. The following categories of controversies are used in the assessment:

- Biodiversity & land use controversies
- Oil spills
- Toxic releases to water/land controversies

For more details on how controversies are included in the MSCI ESG Ratings model, refer to Section 3.3.2, Controversies cases, of “ESG Ratings Methodology.”

**Biodiversity & Land Use Exposure Score**

The Exposure Score on this Key Issue is based on the Business Segment Exposure Score and Geographic Exposure Score using the formula outlined in Section 3.2.2, Determining Exposure Scores, of “ESG Ratings Methodology.” The Business Segment Exposure Score and Geographic Exposure Score are scored on a 0-10 scale, with 10 corresponding to the highest risk and 0 corresponding to the lowest risk. Refer to Section 3.2, Analyzing Risk Exposure, of “ESG Ratings Methodology” for additional details. The following data sources and methodologies are used in the Exposure Score calculation:

**Business Segment Exposure Score**

The Business Segment Exposure Score is a weighted average of the Biodiversity & Land Use risk exposure scores of a company’s business segments. Scores are weighted by the proportion of a company’s total assets in each business segment. The following sources are used to determine this 0-10 score:

- **Type of Operations**: Percentage of operations with high/moderate/low impact in biodiversity
  
  (Sources: World Resources Institute, Refinitiv, MSCI ESG Research, company disclosures)

**Geographic Exposure Score**

The Geographic Exposure Score is a weighted average of the Biodiversity & Land Use risk scores of the countries and regions in which a company operates. Scores are weighted by the proportion of a company’s total assets in each geographic segment. The following sources are used to determine this 0-10 score:

- **Location of Operations**: Percentage of operations in areas with high/moderate/low sensitivity of biodiversity
  
  (Sources: “Global Forest Watch,” World Resources Institute; UNDP Human Development Report; Refinitiv; MSCI ESG Research; company disclosures)
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Contact us
msci.com/contact-us

AMERICAS

Americas  1 888 588 4567 *
Atlanta     + 1 404 551 3212
Boston      + 1 617 532 0920
Chicago     + 1 312 675 0545
Monterrey   + 52 81 1253 4020
New York    + 1 212 804 3901
San Francisco + 1 415 836 8800
São Paulo   + 55 11 3706 1360
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EUROPE, MIDDLE EAST & AFRICA

Cape Town  + 27 21 673 0100
Frankfurt   + 49 69 133 859 00
Geneva      + 41 22 817 9777
London      + 44 20 7618 2222
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Paris       0800 91 59 17 *

ASIA PACIFIC

China North 10800 852 1032 *
China South 10800 152 1032 *
Hong Kong   + 852 2844 9333
Mumbai      + 91 22 6784 9160
Seoul       00798 8521 3392 *
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