

Quarry Rehabilitation and Biodiversity Directive

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Quarry Rehabilitation and Biodiversity Directive

1. Scope

The Quarry Rehabilitation and Biodiversity Directive (“Directive”) is issued under the Holcim Nature Policy. The term “Quarry Rehabilitation” as used in this document refers to all activities needed to ensure that quarry operations are closed in an environmentally and socially responsible manner with the objective of ensuring a sustainable post-quarrying land use. It is the overall term for renaturation, restoration, reclamation and re-cultivation.

The scope of this Directive is worldwide and applies to Holcim Ltd and its “Countries” which are financially consolidated and/or under management control. In the scope are mineral extraction sites, including quarries and pits for both cement and aggregate and industrial minerals operations, that is:

- Any extraction sites owned or leased by a Holcim company
- Any extraction sites under the management control by a Holcim company
- Any extraction sites where a Holcim company is the holder of the mining rights.

This includes sites classified as: active, closed, mothballed, decommissioned, under remediation and under construction. Where new operating quarries are acquired, this Directive will be implemented within two years of acquisition. The Directive does not apply to divested sites.

In associated companies or joint ventures where Holcim does not have financial or management control, the responsible Group Executive Committee Member will establish that the associated company or joint venture is aware of the Directive and will encourage its adoption or at least essentially equivalent standards by such associated company or joint venture.

2. Objectives

Holcim commits that a Quarry Rehabilitation Plan will be in place and executed at all mineral extraction sites included in the scope. Depending on the local importance of biodiversity, regulatory requirements, and site’s specificities, measures to protect and enhance biodiversity will be fully integrated into the development of the Quarry Rehabilitation Plan.

Holcim commits that a Biodiversity Management Plan (as explained in session 3, Rule 4) will be in place for all quarries that are considered to be located in areas of high biodiversity importance. Identification of the Biodiversity Importance Category of the quarry is performed according to the classification set out in the [Holcim Biodiversity Management Plans and Karst Biodiversity Management](#). High biodiversity Importance areas are those classified with a Biodiversity Importance Category 1 and 2 (BIC 1&2).

In addition, Holcim commits not to open new sites within protected areas declared under World Heritage, International Union for Conservation of Nature (IUCN) I and III.

The objective of the Directive is to define the requirements which aim to achieve the following:

- To ensure that extraction site operations and rehabilitation, at a minimum, meet all applicable laws and regulations
- To ensure that the core principles set out in the Nature Policy are followed and implemented in all extraction sites within the scope
- To make the exhausted site safe and stable for future land use
- To manage impacts, risks and future liabilities

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- To promote the evaluation of different options for future uses, balancing the socio-economic and environmental considerations (e.g., potential for employment and income generation and opportunities for biodiversity enhancement)
- To assess likely effects on biodiversity over different phases of quarry development, from site preparation, operation, rehabilitation and closure
- To ensure the mitigation hierarchy (avoidance, minimization, rehabilitation/restoration, offset/compensation) is applied and identify opportunities for enhancing biodiversity to achieve viable positive change for biodiversity (e.g. improve existing habitat conditions and create new habitat with a high regional importance)
- To understand better the financial requirements of the quarry closure, including rehabilitation related activities.

3. Rules and requirements

In order to meet the objectives set in this Directive, the following eight rules and requirements are defined:

Rule 1: Comply with legal requirements and the Holcim Code of Business Conduct

Compliance with applicable laws and regulations and the [Holcim Code of Business Conduct](#) is a minimum requirement. Land control, surface rights and mineral rights, as well as local requirements for site biodiversity management must be taken into account in the development of any Quarry Rehabilitation Plan. Guidance regarding dealings with government officials can be found in the [Holcim Anti-Bribery and Corruption Policy](#) as well as [Responsible Lobbying and Advocacy](#) Directive.

Systems and processes must be in place to understand and comply with all requirements related to quarry rehabilitation. Should the implementation of this Directive require revisions of previously approved rehabilitation plans, a prior review by a suitably qualified person must be conducted to determine whether changes to permit conditions are required, or whether existing operating permits can be revised, without jeopardizing the viability of ongoing operation.

Rule 2: Understand the site characteristics and identify the extraction impacts

In order to develop quarry rehabilitation plans and biodiversity management plans effectively, it is crucial to understand the nature of the mineral deposits, the environmental characteristics of the area, and the impacts of the extraction activities to the communities and the environment. To make this possible, the following investigations are required:

- Characterization and formal documentation of the physiography, the geological structure, the raw material properties, the hydrogeological situation, the infrastructure of the site of interest through proper research and investigation
- A robust long-term raw material extraction strategy must be developed, considering all relevant and applicable factors and constraints (e.g. legal, economic, geological, production, operation, slope and ground stability, environment, and social). Mine plans should be developed in accordance with other Holcim policies, directives and guidance
- Identification of potential threats and opportunities on ecosystems, water and communities resulting from the planned extraction activities
- The mitigation hierarchy shall be applied and areas of high biodiversity value shall be identified according to the [Holcim Biodiversity Management Plans and Karst Biodiversity Management](#)
- For existing sites, identification of site aspects and impacts as per the site [HSE-001 Management Standard](#)

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- When selecting new sites or developing major modification projects on existing sites, an environmental and social impact study (ESIA) must be conducted. The ESIA shall identify all direct and indirect impacts of raw material extraction in relation to air, water, health and safety, biodiversity ecosystems and ecosystem services, social and community well-being

Rule 3: Proactively engage with relevant stakeholders

An active engagement with relevant stakeholders, conducted continuously since the planning phase of a mining project and through its development, is fundamental to understand their needs and establish trust in developing the quarry rehabilitation plans and biodiversity management plans. This ongoing stakeholder engagement enables us to better understand stakeholder issues, address them and gain stakeholder trust.

The [Human Rights Directive](#) is the reference document for planning and implementing stakeholder engagement activities. The key elements to make this viable are as follows:

- Assess the level of stakeholder engagement that is required in order to develop and execute a Quarry Rehabilitation Plan. An adequate level of information must be considered here
- Relevant stakeholders must be identified according to the local conditions (e.g. industrial or agricultural interests, representatives of local communities, authorities, civil society organizations such as NGOs, Academia, etc.) and must be consulted in the planning process
- This must be done in coordination with the local Holcim teams that are responsible for Human Rights / Social Impact / Stakeholder Engagement to, ideally, integrate the engagement into the already existing platforms, such as the CAPs (Community Advisory Panels). Not engaging with relevant local stakeholders will not be acceptable
- Opportunities for developing strategic partnerships and engaging in a multi-stakeholder collaboration should be explored
- A communication concept shall be put in place according to local needs and embedded in the overall communication strategy of the country. This should include periodic information sharing to keep the stakeholders updated about the status of the plan implementation.

Rule 4: Identify risks and opportunities and establish a Biodiversity Management Plan

The objectives and targets of the rehabilitation concept must be developed in alignment with the overall long term raw material extraction and land use strategy. It is important to define the end-use of the land post-quarrying early in the planning process, and to set objectives and targets accordingly. These can be further refined during the extraction operation lifetime. Specific consideration shall be given to:

- Existing permit requirements
- Economic viability
- Needs and expectations of the local communities
- Elevation of rehabilitated lands to the highest and best use
- Reintegration of the site into the surrounding environment
- Opportunity to enhance biodiversity or water resources
- Sustainable post-closure use.

Biodiversity Management Plans (“BMPs”) must be developed for sites of high biodiversity importance defined according to the [Holcim Biodiversity Management Plans and Karst Biodiversity Management](#). The appropriate level of biodiversity management for the site must be determined based upon the assessment of risks and opportunities according to the methodology given in the [Biodiversity Management System \(BMS\)](#), in alignment with the Quarry Rehabilitation Plan and together with relevant stakeholders to maintain or enhance the biodiversity values of the site

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and its surroundings throughout the lifetime of the quarry. A management plan for biodiversity should, at a minimum, be considered as a supplement to the quarry rehabilitation plan, and in other cases, as a core part of the quarry rehabilitation plan.

Rule 5: Implement Quarry Rehabilitation Plan and Biodiversity Management Plan

The implementation of the Quarry Rehabilitation Plan and the Biodiversity Management Plan involves carrying out the actions and processes detailed in the plans to meet the established objectives.

Progressive rehabilitation, performed continually and sequentially during the quarrying operations, is preferred to demonstrate good faith to stakeholders and regulators, to enhance Holcim's reputation of conducting business responsibly, and to reduce the overall operational cost and the financial liabilities for the final quarry closure.

Transformative rehabilitation, focused on local ecology value and ecosystem services, is promoted to increase the biodiversity value of rehabilitated areas by capitalizing on natural processes, endemic species and local adaptation. All required actions, as defined in the Biodiversity Management Plan, to manage biodiversity (e.g. to protect endangered species) shall be considered during the planning, opening and extraction phases of quarry development.

Key principles to consider in the implementation of Quarry Rehabilitation and Biodiversity Management Plans:

- For quarry opening: A rehabilitation concept must be developed showing the final layout and the future land use. To ensure the optimal use of the mineral resources, the quarry rehabilitation concept is translated into mid- and long term plans, taking into consideration biodiversity requirements, and must describe in detail the stages of their implementation
- During the operation: Rehabilitation must be integrated into the extraction plan. In order to achieve this, periodic reviews of the extraction plan must be conducted and updated as needed, depending on local requirements. In parallel, actions identified in the BMP to achieve biodiversity targets and objectives are implemented
- For closure of the quarry: A detailed final rehabilitation plan shall be developed, showing the final layout of rehabilitated areas and land use, and reconciled with the actual situation in the field.

Rule 6: Make financial provisions

Group companies must set up financial provisions for site rehabilitation costs, including requirements as defined in the BMP, in compliance with Holcim Accounting and Reporting Principles (HARP) and with local financial/regulatory requirements. This provision shall be initially based upon the overall rehabilitation concept cost estimate and adjusted during the operation as rehabilitation and biodiversity management plans are further refined and as required by accounting rules.

Rule 7: Review of the Quarry Rehabilitation Plan and Biodiversity Management Plan

The review of the Quarry Rehabilitation Plan and Biodiversity Management Plan will assess to what extent the initial objectives have been achieved and the effectiveness of the corresponding actions. Based on the outcome of the assessment, the objectives and/or actions may have to be adapted accordingly. The frequency of review shall depend on the local requirements (permits) and the progress of the quarry development. In the absence of stricter regulatory requirements, a review must be carried out every five years. If, as a result of the review, significant changes are anticipated, relevant stakeholders as locally defined shall be consulted, where appropriate and at an appropriate time. Any significant changes agreed with relevant stakeholders must be documented.

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Rule 8: Assess Biodiversity conditions with Biodiversity Indicator and Reporting System

All sites included in the scope of this Directive shall implement the [Biodiversity Indicator and Reporting System](#) (BIRS) methodology to measure biodiversity and to monitor the development of biodiversity at site in accordance with the actions implemented as defined in the Biodiversity Management Plan and the Quarry Rehabilitation Plan.

Changes in biodiversity conditions will be monitored using BIRS. The BIRS assessment components shall be updated periodically:

- Maps and areas of each habitat shall be updated annually
- Changes in the ecological conditions of each habitat shall be updated every three years
- Regional context factors for each habitat shall be updated as a minimum every five to ten years, unless some large-scale and significant land-use changes took place in the surrounding region.

4. Monitoring and reporting

The progress of rehabilitation and biodiversity management activities must be monitored and evaluated as required by the local authorities, or at least on an annual basis. The results should be assessed as part of the [HSE-001 Management System](#) and improvement actions should be defined if needed.

All Countries and active sites must report quarry rehabilitation and biodiversity indicators, as defined by Group Sustainable Development, according to Holcim Environmental Questionnaire Guideline. This standard specifies the mandatory reporting tools, reporting frequency, and reporting scope.

- Quarry rehabilitation requirements are also integrated in the Minimum Control Standards (MCS) framework: MCS 17 - Quarry reserves and provisions for restoration and rehabilitation. The primary objective to this minimum control is to ensure that quarry reserves are secured, restoration and rehabilitation requirements are implemented for every quarry and properly recorded in financial statements.

5. Organization

5.1 Group Level

5.1.1 Quarry Rehabilitation and Biodiversity Steering Committee

The Board of Directors has a dedicated Committee with a specific remit on Health, Safety and Sustainability (HSSC). The committee consists of five Board members, is chaired by a senior Board member, and meets at least quarterly. This committee's mission is to provide advice on strategic direction and on the development and promotion of sustainability related topics - with biodiversity being one of the key sustainability focuses.

5.1.2 Group Sustainable Development Function

- Reviews and proposes amendments to this Directive where and when necessary
- Assists Countries in understanding and applying the Directive
- Provides standards and tools in the implementation of the Directive
- Supports training on the Directive in the Countries
- Supports experience exchange and share best practices between Countries
- Monitors compliance of the Countries with this Directive, tracks annual progress, and provides annual progress reports to ExCo

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- Provides support on quarry rehabilitation planning and biodiversity management
- Provides support in BIRS implementation (coordination, timeline, external expert support, training)
- Provides support in reporting related to quarry rehabilitation and biodiversity indicators
- Keeps the database of Country local legislation deviations from this Directive as identified and informed by Country Sustainability/HSE Manager

5.1.3 Other Group Functions

- Provide technical support, including training, on quarry development and management
- Cooperate with Group Sustainability in the interpretation of this Directive
- Support experience exchange and share best practices between Countries, together with Sustainability
- Support reviews of the Directive and proposed amendments

5.2 Country Level

5.2.1 Country CEO

- Is ultimately responsible and accountable for the implementation and compliance of the Country with the Quarry Rehabilitation and Biodiversity Directive
- Delegates responsibility for the implementation of the individual requirements of the Directive to the concerned functions/managers within the organization
- Ensures the exhausted site is geo-technically safe and stable for future land use

5.2.2 Country Sustainability/HSE Manager

- Ensures that the Country CEO has complete and reliable information on the Country's compliance with this Directive
- Reports annually the status of implementation and compliance to Group level via the functional environmental reports
- Supports the implementation of the requirements of this Directive within the organization, notably seeking input from Country Legal to assess legal requirements
- Identify, with Country Legal support, where this Directive differs from local legislation and report these differences to Group Sustainability
- Ensures that the proper documentation in compliance with the Directive is generated, maintained and made accessible where required
- Share good practices and promote success stories pertaining to quarry rehabilitation and biodiversity

5.2.3 Country CFO or Head of Finance

- Makes financial provisions for site restoration, regularly reviews and updates them.

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This Directive was approved by the Group Executive Committee on October 20, 2016 and came into force in November, 2016.

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Version dated: October 31, 2016	
Responsible Group Executive Committee Member: Nollaig Forrest – Chief Sustainability Officer	

Document Control			
Approved by:	Antonio Carrillo Doblado / Vice President, Sustainability		
Related Policy, Directives and MCS	Nature Policy, Climate Policy, Water Directive, Code Of Business Conduct, Anti-Bribery and Corruption Policy, Responsible Lobbying and Advocacy Directive, HSE-001 Management Standard, Human Rights Directive, MCS #17: Quarry reserves and provisions for restoration and rehabilitation, MCS #61: Environmental impact, MCS #63: Climate change		
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Annexes

Annex 1: Holcim Policies, Directives, Standards and Tools related to Holcim Quarry Rehabilitation and Biodiversity Directive

Link	Description	Responsibility	Reference
Nature Policy	The Nature policy sets out our approach towards the efficient use of natural resources and our path towards a nature-positive future. The Policy forms part of Holcim's core values and its main purpose is to set out the company's objective to protect and restore water and biodiversity. It defines how employees should interact with business partners, suppliers, communities and other stakeholders.	Chief Sustainability Officer	Nature Policy
Cement Environmental Directive	The Directive specifies the environmental requirements for cement operations to be complied with in order to fulfill the Environmental Policy principles. Its objective is to identify, manage and mitigate environmental impacts and risks to prevent environmental damage, negative health impacts on surrounding communities as well as related reputational damage.	Chief Sustainability Officer	Environment Policy
Human Rights Directive	Holcim's Human Rights Directive defines the approach and guidelines on systematic identification, prevention, mitigation, monitoring and remediation of human rights risks and impacts. It also includes guidance for stakeholder engagement.	Chief Sustainability Officer	Human Rights Directive
Health Safety and Environment Management System (HSEMS) - HSE-001	The Health, Safety and Environment Management System (HSEMS) provides a structured proactive approach for overall continual improvement of all HSE processes to prevent any impact on the environment and/or harm to people. The requirements of this Standard are aligned with the Group Health, Safety and Environment (HSE) policy as well as with ISO 14001 and 45001 Standards.	Chief Sustainability Officer	HSE-001 Health and safety Management System

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Holcim Code of Business Conduct	The Code specifies how to act with integrity performing tasks, and offer guidance on how to deal with challenging situation	Group CEO	Holcim Code of Business Conduct
ABC Policy	The Policy sets out the relevant principles for appropriate business conduct and related rules when interacting with Third Parties, whether Public Officials or commercial parties.	Group CEO	Holcim Anti-Bribery and Corruption Policy
Site Biodiversity Management Recommendation	The manual sets out the recommendation for biodiversity management at Holcim across the entire site lifecycle. It specifies how to determine the biodiversity importance of the site, the potential impacts from the operations, risks and opportunities, and the level of management needed.	Chief Sustainability Officer	Site Biodiversity Management Recommendation
Biodiversity Indicator Reporting System (BIRS)	BIRS is an IUCN monitoring and reporting protocol to assess the site biodiversity condition, taking into account the extent of every habitat type found on site, ecological conditions of these habitats, and the uniqueness and ecological importance of each habitat in a regional context.	Chief Sustainability Officer	Biodiversity Indicator and Reporting System
LafargeHolcim Biodiversity Management Plans and Karst Biodiversity Management	The Biodiversity Management Plans and Karst Biodiversity Management document sets out the guidelines for biodiversity management plans review, identification and management of karst areas, and guidelines to assess the Biodiversity Importance Category (BIC) of each quarry.	Chief Sustainability Officer	LafargeHolcim Biodiversity Management Plans and Karst Biodiversity Management
Directive Responsible Lobbying and Advocacy	This Directive sets out the relevant principles regarding the engaging public authorities in order to inform policy debate and to assist public authorities in their decision-making processes on issues of relevance to Holcim.	Group CEO	Directive Responsible Lobbying and Advocacy
Quarry Rehabilitation Manual	The Manual supports quarry rehabilitation planning for new project development and for operational sites.	Aggregates and Cement Functions	Quarry Rehabilitation Manual

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Annex 2: Relevant External Documents related to Holcim Quarry Rehabilitation and Biodiversity Directive

Recommendation	Definition / Description	Reference
Aggregates Mineral Resource Management	Chapter 2 of the ROCK handbook identifies key concepts and best practices for mineral resources and land management.	ROCK Handbook Chapter 2
GCCA Guidelines for Quarry Rehabilitation and Biodiversity Management	This document released by the Global Cement and Concrete Association aims to provide GCCA members with practical guidance for the design and progressive implementation of rehabilitation practices and biodiversity management, by presenting the key issues, explaining the connection between operations and healthy ecosystems, outlining management approaches, and linking to reference documents, data, tools and guidance.	GCCA Guidelines for Quarry Rehabilitation and Biodiversity Management
WBCSD Biodiversity Management Plan	This document has been designed to offer recommendations for the development of biodiversity management plans (BMP, also sometimes known as biodiversity action plans) by the World Business Council for Sustainable Development's (WBCSD) Cement Sustainability Initiative (CSI), which represents 24 leading cement producers with operations in over 100 countries.	WBCSD Biodiversity Management Plan

Annex 3: Definitions

IUCN Protected Area	The IUCN definition of a protected area is “A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values
IUCN Protected Area Management Category Ia	<p>Strict Nature Reserve</p> <p>They are defined by IUCN as “strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values</p>
IUCN Protected Area Management Category Ib	<p>Wilderness Area</p> <p>They are defined by IUCN as “large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition</p>
IUCN Protected Area Management Category III	<p>Natural Monument or Feature</p> <p>They are defined by IUCN as “areas set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove They are generally quite small protected areas and often have high visitor value</p>

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Mitigation hierarchy	<p>The mitigation hierarchy is a widely used tool that guides users towards limiting as far as possible the negative impacts on biodiversity from development projects. It emphasizes best-practice of avoiding and minimizing any negative impacts, and then restoring sites no longer used by a project, before finally considering offsetting residual impacts. The mitigation hierarchy is one of the key element supporting Holcim’s Nature Policy and its sequential steps are:</p> <ol style="list-style-type: none"> 1. Avoidance 2. Minimisation 3. Rehabilitation/restoration 4. Offsetting
Progressive rehabilitation	<p>Progressive rehabilitation refers to the rehabilitation and restoration work that is performed continually and sequentially during the quarrying operations, alongside the extraction operations. It is preferred to demonstrate good faith to stakeholders and regulators to enhance Holcim reputation of conducting business responsibly, and to reduce the overall operational cost and the financial liabilities for the final quarry closure.</p>
Quarry rehabilitation	<p>All activities needed to ensure that quarry operations are closed in an environmentally and socially responsible manner with the objective of ensuring a sustainable post-quarrying land use. It is the overall term for re-naturation, restoration, reclamation, re-cultivation and includes progressive rehabilitation.</p>
Transformative rehabilitation	<p>Transformative rehabilitation refers to a type of rehabilitation that focuses on enhancing the biodiversity value of the rehabilitated land, prioritizing the local ecological functions and supporting ecosystem services.</p>
World heritage sites	<p>A World Heritage site is a place (such as a building, city, complex, desert, forest, island, lake, monument, or mountain) that is listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as being of special cultural or physical significance.</p>