LafargeHolcim Biodiversity Management Plans and Karst Biodiversity Management

LafargeHolcim (LH) aspires to be a leader in sustainability; in its Sustainability Plan it recognises the Group has both opportunity and responsibility to make a positive difference in the construction materials industry, and acknowledges biodiversity management as a material issue.

In order to identify challenges and improvement opportunities in the biodiversity management approach post-merger and in particular to minimise the risks to sensitive karst biodiversity, LH requested Fauna & Flora International (FFI) (1) to review three Biodiversity Management Plans (BMPs) for sensitive[1] sites[2] in Asia, (2) to advise on a BMP for a sensitive site in Malaysia, (3) to recommend a process for independent reviews of BMPs, and (4) to provide guidance on the identification and management of karst habitats and their special biodiversity.

BMP DEVELOPMENT AND REVIEW

Of the three BMPs reviewed (Lhoknga and Narogong in Indonesia, Bulacan in the Philippines), all sites had committed significant time and resources to gathering supporting biodiversity information and the site operational staff were found to be knowledgeable and highly motivated.

However, despite detailed biodiversity studies carried out in accordance with previous standards, some required information to determine the Biodiversity Importance Category (BIC)[3] and related objectives and targets to be addressed in the BMP were missing. Notably, the dependence of a species on a habitat was assumed rather than proven, resulting in one of the sites being classified as of higher biodiversity importance than it was. This is known also to be the case at other sites beyond this project.

The criteria for the BIC values and the instructions for the development of a BMP (including the required essential information, content, structure, timeframe, monitoring and external review) were, as a result, refined and made more detailed. This should enable increased efficiency and effectiveness of biodiversity management efforts by the company resulting in fewer but better BMPs.

[1] For the purpose of LafargeHolcim, sensitive sites refer to sites of High Biodiversity Value and reflect areas of global and national biodiversity importance.
[2] The term 'site' refers to 'extraction site', 'concession area', 'quarry', and 'pit' and associated infrastructure under management control (leased or owned) by LafargeHolcim.
[3] A methodology defined by IUCN for Holcim to determine the level of biodiversity importance, and refined under this project for use across LH.

Ultimately, the BMP should be a short and sharp document with information presented in a logical framework outlining the key biodiversity issues to be addressed and what is to be achieved in the lifetime of the BMP. The focus of the BMP should be on avoiding and minimising impacts to the biodiversity features that have resulted in the categorisation of the site as of global or national biodiversity importance.

The lessons learnt from the BMP review were applied to make recommendations for BMP development for Kanthan, Malaysia, a sensitive site with globally important biodiversity. FFI also supported a local stakeholder consultation to inform the recommendations.

KARST IDENTIFICATION AND MANAGEMENT

Karst is a terrain formed by dissolution of gypsum and carbonate rocks by natural water. Many karst features - especially caves, springs and subterranean rivers - are associated with fauna and flora that are highly adapted to unique conditions and are often found nowhere else on earth. Karst and its associated biodiversity are also important for generating ecosystem services for people, such as clean water and providing spiritual places. Karst habitats and their unique biodiversity are particularly vulnerable to extraction activities because they are difficult and often impossible to restore. Many karst species have highly restricted ranges and are often endemic to a single locality. They are challenging to detect and often overlooked in impact assessments and national surveys and, therefore, prone to extinction.[4]

The presence of karst in a mining zone often involves a high risk of lasting damage to biodiversity. Avoidance of impacts to important karst features and the establishment of appropriate buffer zones should be a priority when planning for mining. Where avoidance is not possible, further steps of the mitigation hierarchy[5] should be considered sequentially. Existing operations may have less opportunity for avoidance than greenfield developments. It is important that each site investigates and documents the actions it takes to reduce loss to karst (and other) biodiversity and properly describes the remaining loss that may be incurred.

The detailed guidance on BMP development, review and karst management defined for LH to strengthen their biodiversity management is provided in the annexes.

RECOMMENDATIONS

The key recommendations are:

- Prioritisation should be given to avoidance and minimisation of impacts to biodiversity of national and global importance.
- All quarries should determine whether there are High Biodiversity Values on site using the BIC categorisation process defined for the company (see Annex 1).

[4] For more information see BirdLife/FFI/IUCN/WWF (2014). Joint Briefing Paper on Extraction and Biodiversity in Limestone Areas'. Cambridge, UK. https://www.birdlife.org/sites/default/files/Extraction-and-Biodiversity-in-Limestone-Areas.pdf

[5] For more information see Cross-Sector Biodiversity Initiative (2015). A cross-sector guide for implementing the Mitigation Hierarchy. Prepared by the Biodiversity Consultancy on behalf of IPIECA, International Council on Mining and Metals and the Equator Principles Association. Cambridge, UK. http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/

- If a quarry is of High Biodiversity Value (BIC 1 or 2), a BMP is required in order to address, by means of clearly stated targets, all those biodiversity features which are responsible for the specific biodiversity category of the quarry**.** Additional targets (e.g. relating to other important local objectives of the company or other regional biodiversity initiatives) may also be included if it supports management.
- For quarries of category (BIC 3 or 4), biodiversity-related targets may be included in the site rehabilitation plans.
- It is imperative that adequate provisions are made for resourcing (time and finance) and monitoring for the effective implementation of BMPs.
- A process for regular review in order to ensure consistency, quality and accuracy of BMPs should be defined and resourced. This should include a review and verification by an external expert.
- A new simple guidance tool to support the identification and management of karst biodiversity is presented in Annex 2. This requires collaboration between Corporate level Sustainable Development and colleagues on sites and across Geology and Mining to refine and align with existing processes within the company.
- Build capacity, collaboration and information sharing within the company for better BMPs and improved karst biodiversity management.
- Providing corporate support for site-level biodiversity management through the identification of a biodiversity related Key Performance Indicator and global biodiversity commitments.

The BMP focuses on the application of minimum standards for biodiversity across the Group 'the must haves'. However, where individual quarries have the opportunity to go beyond compliance this should be encouraged. This is where sustainability leadership will be evident, and FFI believes that the 'nice to haves' will be essential for achieving Group biodiversity commitments. Recommendations include:

- Identify sites with potential for biodiversity enhancement and invest in them.
- Be an active advocate for biodiversity in the landscapes in which you operate and take a landscape-scale perspective.
- Support wider efforts to understand and manage karst biodiversity.
- Embrace biodiversity stewardship. LH should aspire to be a steward managing all its landholdings in a manner consistent with responsible care for the resources and values that they contain, including the biodiversity which they hold and represent.

Annex 1: Criteria for biodiversity importance category

<table>
<tr><th>Category</th><th>Importance</th><th>Criteria</th><th>BMP</th></tr>
<tr><td>1</td><td>Global importance</td><td>One or more of the following:
Overlap with an internationally recognised Protected Area
Internationally recognised Protected Area within 5km <u>and</u> with relevant ecological connection* to one or more site habitats.
Presence of Globally Threatened Species (IUCN Red List) <u>and</u> verified dependence* on one or more site habitats.
Presence of a Globally Outstanding and/or Threatened Ecosystem/Habitat
Presence of Globally Important Biodiversity Feature* (such as a karst cave).</td><td rowspan="2">BMP needed</td></tr>
<tr><td>2</td><td>National importance</td><td>One or more of the following:
Presence of a nationally recognised Protected Area
Nationally recognised Protected Area within 5km <u>and</u> with relevant ecological connection to one or more site habitats.
Presence of Nationally Threatened Species* (National Red List) <u>and</u> verified dependence on one or more site habitats.
Presence of a Nationally Outstanding and/or Threatened Ecosystem/Habitat
Presence of a Nationally Important Biodiversity Feature</td></tr>
<tr><td>3</td><td>Local importance (National potential)</td><td>One or more of the following:
Site in landscape with diverse, natural ecosystems.
Site in modified landscape with potential for biodiversity enhancement (biodiversity island).
Site with significant local value of the natural environment.</td><td rowspan="2">Biodiversity management actions and/or biodiversity-related targets in Rehab. Plan</td></tr>
<tr><td>4</td><td>Low importance</td><td>Site in heavily modified, intensely managed landscape without globally, nationally or locally important biodiversity features.</td></tr>
</table>

*** Definitions**

<u>Relevant ecological connection (for *Protected Areas*)</u>

- Site functioning as buffer zone to the PA
- Site serving as corridor between different PAs which are essential for the movement of the species living in the PA
- Site exercising an important ecological functions for PA, such as watershed protection for the PA
- Important habitat type of the PA also found on the site.

<u>Verified dependence (for *Threatened Species*)</u>

Overlap of the site with the distribution polygon of a Globally (or Nationally) Threatened Species, or the observation of such a species on the site, does not automatically mean that the site qualifies for BIC 1 (or 2). If there is such an overlap or sighting during a biodiversity survey, it must be verified that the species does regularly occur on the site and is, in fact, dependent on one or more habitats of the site for an important part of its life cycle (e.g. breeding, regular feeding, stopover site during migration).

This verification is essential for avoiding "wrong positives" and should be undertaken by an expert - depending on the species, either by means of a desk assessment, a targeted field survey or a combination of the two.

<u>Important biodiversity features – examples</u>:

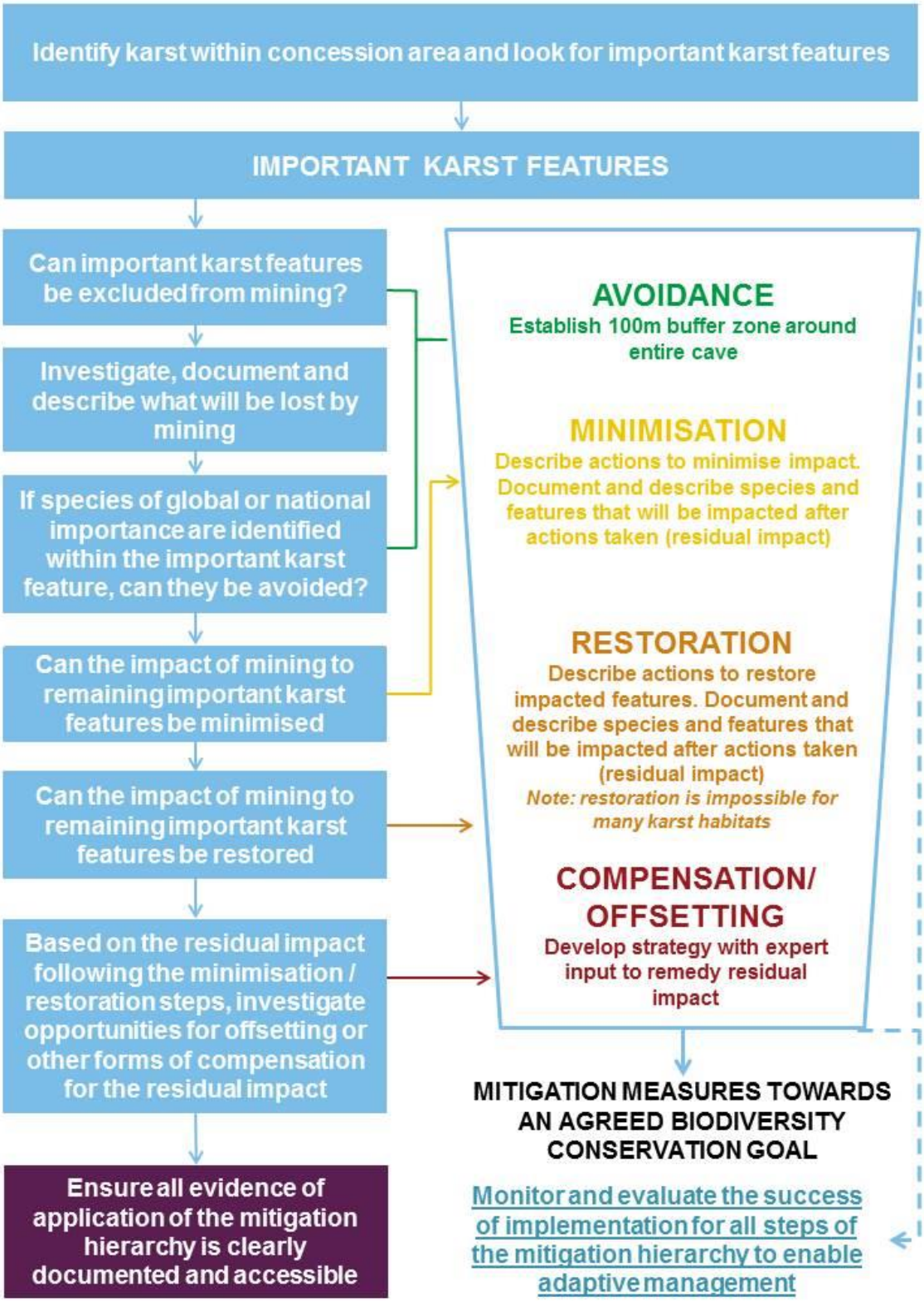
- Caves (especially in karst areas); Freshwater spring
- Internationally (or nationally) important breeding colony of a species (e.g. birds), which are firmly linked to the quarry site and have been known to occur there for a long time
- Internationally or (nationally) important wintering or stopover site for migratory species.

<u>Nationally threatened species</u>

While there are clear criteria for the definition of a **Globally Threatened Species** (consisting of **Critically Endangered**, **Endangered** and **Vulnerable**), the situation regarding the **National Red Lists** is more complex:

- Some countries have National Red Lists, derived from the IUCN global criteria, but adapted to the national situation (http://www.nationalredlist.org/). These lists can be used for the determination of the site BIC.
- Some countries, however, have only lists of protected species. They are generally not particularly meaningful for the BIC since they contain common as well as rare species. In this case a relevant expert should make an assessment of the species found on the site following the IUCN criteria http://cmsdocs.s3.amazonaws.com/keydocuments/Reg_Guidelines_en_web%2Bcover%2Bbackcover.pdf

Annex 2: Karst management decision tree



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