BONSUCRO GUIDANCE FOR OPERATORS – SUPPLY BASE MAPPING

GUIDANCE FOR MILL OPERATORS TO MAP AND COMPILE INFORMATION ON BIODIVERSITY, NATURAL ECOSYSTMS AND HIGH CONSERVATION VALUE INDICATORS ACROSS THE UNIT OF CERTIFICATION, TO SUPPORT DEVLEOPING BIODIVERSITY MANAGEMENT PLANS.

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SCOPE

Biodiversity and ecosystem services are linked to natural ecosystems, however as most areas of natural ecosystems lack formal protection over time, a large proportion of the world's potentially cultivable, natural lands have been cleared for agriculture. This is particularly the case for natural grasslands of which very little remains, and wetlands, many of which have been drained and ploughed. Forest have also been targeted, and today more than half of the original global forest cover is gone. Some of these areas are (more or less effectively) maintained in natural reserves and national parks, or protected from exploitation through multi-national conventions and treaties.
Yet biodiversity and natural ecosystems are important for a range of reasons, including protecting water resources, reducing transmittable diseases, pest control, improving resilience against the impacts of climate change, and for the livelihoods of local communities. It is recognised that without aiming for it, farming activities might unwillingly or unintentionally cause harm to biodiversity and damage natural ecosystems that provide important ecosystem services. For this reason, the Bonsucro Production Standard requires that biodiversity and natural ecosystems, including High Conservation Values (HCV), are maintained and enhanced, and it does not allow for natural ecosystems and HCVs to be lost due to expanding cane and agriculture production.

There are six HCV categories, several of which overlap with biodiversity, natural ecosystems and ecosystem services. As High Conservation Values (HCVs) are significant environmental and social features of critical importance, they require extra attention, in terms of identification and mitigation of negative impacts.
The globally applicable definitions, adopted by Bonsucro, reads:

HCV 1, Species diversity: Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

HCV 2, Landscape-level ecosystems and mosaics: Large landscape-level ecosystems, ecosystem mosaics and Intact Forest Landscapes (IFLs) that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3, Ecosystems and habitats: Rare, threatened, or endangered ecosystems, habitats or refugia.

HCV 4, Ecosystem services: Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable s oils and slopes.

HCV 5, Community needs: Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.

HCV 6, Cultural values: Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

Indicators 4.1.1 and 4.1.2 seek to maintain and enhance biodiversity, HCVs and the natural ecosystems these depend upon around the mill and in **on-going** cane production

Many biodiversity features, such as riparian areas along rivers and streams, are structured at large scales and rely upon connectivity across the landscape. For this reason it is more efficient to centralize the mapping of biodiversity features, so that as much as possible biodiversity measures taken at the production level are coordinated and can contribute to maintaining a wider ecological functioning and connectivity.

In indicator 4.1.1 the operator ensures that biodiversity and natural ecosystems are mapped. The mill operator compiles locally relevant information on biodiversity, HCV indicators, impacts and mitigation measures to map of biodiversity and natural ecosystem around the mill and agricultural area in the unit of certification. This guidance document provides additional resources to the mill for these activities.

In order to effectively develop and implement a biodiversity Management Plan (BMP) under 4.1.2, growers need to be able to (or helped to) easily distinguish biodiversity features, understand their value, and how these are impacted by their own agricultural production activities. The maps and biodiversity resources compiled in 4.1.1 supports the operator identify biodiversity features and HCV indicators relevant to their context, impacts and management practices.

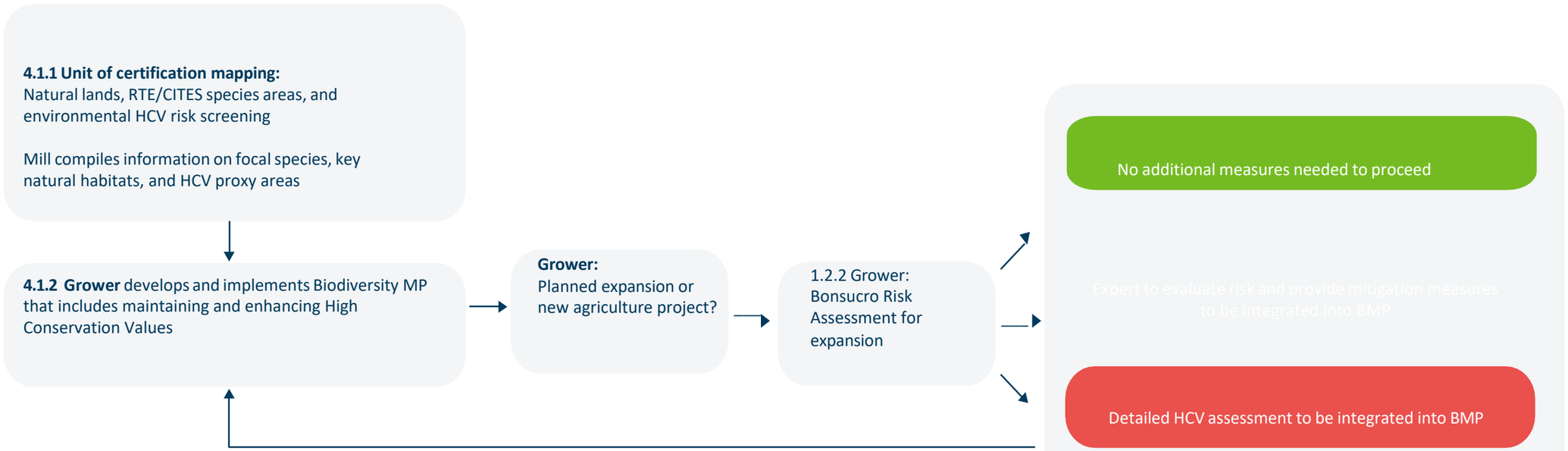


Figure 1 Links between Bonsucro Standard Indicators that lead to developing and implementing a BMP

The mill operator should have map(s) containing at least the following information for the area on and surrounding the mill and agricultural area in the unit of certification:

a. Location of the mill and agricultural area in the unit of certification
b. Natural land cover (riparian areas, forest patches, rivers, streams, wetlands, lakes)
c. Areas of elevated risks to HCVs
d. Any other environmental and biodiversity risk, threats and impacts.

Part 1 and Part 2 of this guidance document provides information to help compile and process information on biodiversity features and HCV indicators across the agricultural area under certification, which link with Bonsucro's guidance for developing Biodiversity Management Plans for 4.1.2. It is therefore useful to be familiar with both guidance documents.

PART 1: GUIDANCE ON HOW TO COMPILE AND PROCESS INFORMATION ON BIODIVERSITY, NATURAL ECOSYSTEMS AND HCV INDICATORS ACROSS THE UNIT OF CERTIFICATION

For mill operators and growers to be actively engaged in developing and implementing biodiversity management plans, they need simple biodiversity assessment approaches adapted for non-specialists.

Bonsucro encourages using a combination of:

- **Key Habitats[1]:** which are natural habitats on and around production lands that can be easily identified; and
- **Focal Species:** a predetermined checklist of species of conservation concern, that are easily identifiable and may be affected by farming practices

The following sections provide guidelines for the mill to compile relevant information on Focal species and Key habitats across the agricultural lands. It is recommended to seek input from experts[2] to support the mapping and information compilation. Existing environmental management plans or environmental impact studies, as well as other available local information resources should be drawn upon through the process to avoid duplication of effort and knowledge.

To then develop the BMP for 4.1.2, operators (either growers or coordinated by the mill) will be assessing biodiversity features on and around their farm and identifying impacts and mitigation measures. The Focal Species and Key Habitat materials support operators in doing this on their own without the need for 'expert' support. The mill may organise training sessions with growers, to make the information materials available to growers. This is also an opportunity to create dialogue on biodiversity impacts and mitigation measures, including how these could be coordinated between growers and other stakeholders, for example on restoring riparian vegetation (vegetation on river banks or lake shores). The guidance document for growers to develop a BMP can be incorporated into the training and outreach.

Key habitats

Nature (or natural ecosystems) provides habitat for species (animal and plants), but also a range of important local ecosystem services, such as wind breaks, reducing soil erosion and run off, regulating local weather patterns, providing non-timber forest products and supporting livelihoods of local communities, to name but a few. Therefore, it is important to maintain and where possible restore natural ecosystems, in particular where this can reconnect habitat patches to improve ecological connectivity in fragmented landscapes.

Unit of certification mapping of key habitats

A land cover or vegetation map that identifies key natural habitats provides an overview of the biodiversity on the agricultural areas and around the mill and serves several purposes:

- Informs growers which types of natural habitats are in or near their production lands, to support farm-level identification,
- Encourages coordination between growers and other stakeholders on biodiversity measures, e.g. restoring riparian vegetation to promote habitat connectivity
- If the mapping extends across the supply base, this informs growers about areas that are likely not suitable for the expansion of cane production, versus areas that may be more suitable contingent on further field-based assessment of impacts. This is relevant to indicator 1.2.2.

[1] While the term 'key habitats' is used through the Bonsucro guidance, for practical reasons key habitats can be considered as equivalent to natural ecosystems.

[2] Experts include local authorities, NGOs or biodiversity experts. Experts should be familiar with the Bonsucro standard and guidance for 4.1.1, 4.1.2 and guidance for 1.2.2 if agricultural lands are to be expanded. It is recommended that experts support compiling biodiversity materials on focal species and key habitats, unless operators have internal biodiversity and mapping expertise. Input from experts is particularly valuable where the unit of certification is in or near a priority conservation area, and where expansion is planned in any area that is not already under agricultural use.

The mill should access already available recent land cover or vegetation map that covers the unit of certification or develop this. See the Production Standard Implementation Guidance for more details on what should be mapped for this indicator. With regards to natural habitats, the landcover or vegetation map should distinguish the main natural habitat classes and ecosystems that are found across the landscape, which can be broadly separated as:

- forests and woodlands;
- wetlands, rivers and lakes;
- natural grasslands and savannas

For each identified **key habitat**, mills should also compile additional information in order to help growers identify these habitats on and around their farms (for example what qualifies as natural habitat and what to look for), as well as potential negative impacts from farming and appropriate mitigation measures.

This information can be compiled in a summary table

Natural habitat	Impacts from cane production activities	Mitigation measures
Habitat type [e.g. wetlands] Example images Value/role of habitat [e.g. habitat for Focal species, local fishing ground, important water resources..] [Potential HCV ecosystem]	[e.g. pollution through leaching or application of agro-chemicals, degradation through soil erosion, invasive species…]	[e.g. maintain or restore riparian vegetation to reduce soil erosion, implement no spray zones adjacent to water bodies and wetlands..]

Potential High Conservation Value natural habitats (HCV 2 and 3)

Nationally or internationally identified conservation areas have often been designated due to the presence of critical ecosystems. These areas should therefore also be identified as part of the unit of certification mapping, to assess their proximity with cane production lands. These areas can be within or very close to the cane supply area.

Below is a checklist of priority conservation areas that the mill should use to verify if one or more priority conservation areas are located in, or less than 5km from the mill or agricultural area in the unit of certification. Other natural or conservation areas protected by law (e.g. mandatory riparian buffer zones) should also be included.

Priority conservation area checklist for Key Habitats. Unit of certification in or less than 5 km from a (fill in):		
Protected Area:	Yes O	No O
Key Biodiversity Area (KBA):	Yes O	No O
Ramsar site:	Yes O	No O
Intact Forest Landscape:	Yes O	No O
IUCN threatened ecosystem:	Yes O	No O
[Other relevant conservation or natural area]	Yes O	No O

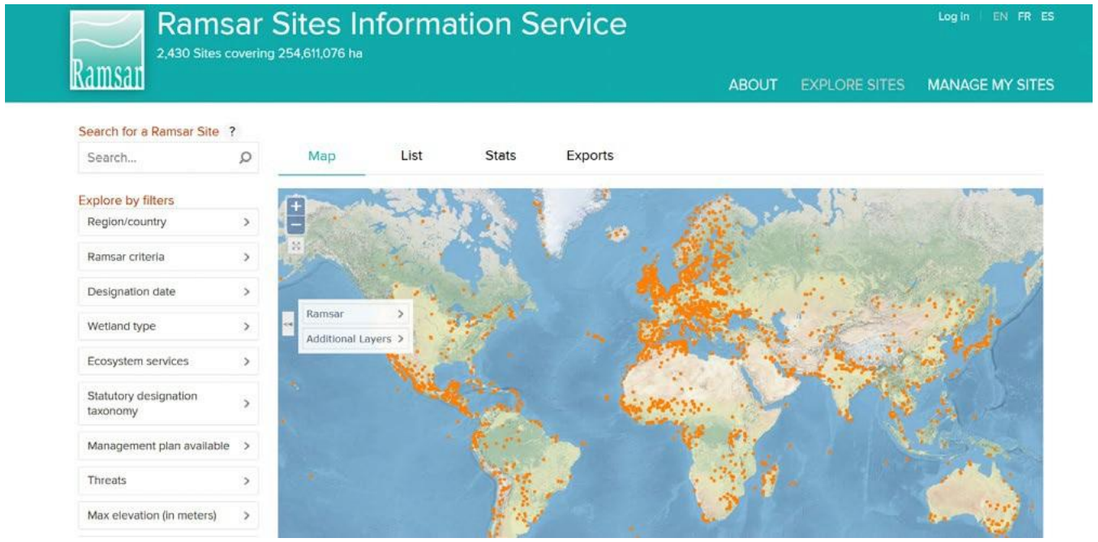
Protected Areas (PAs), are areas recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature, associated ecosystem services and cultural values. Many protected areas (e.g. national parks, reserves) host nationally significant concentrations of biodiversity, some of which are threatened by encroachment of settlers, illegal hunting or illegal clearing for pasture or agriculture. Protected Areas include reserves protected by local and national legislation, IUCN (International Union for the Conservation of Nature)-listed National Parks, Forest Reserves, Community Forest Reserves, Sanctuaries, etc. All six (I-VI) IUCN classes of Protected Areas are considered priority conservation areas.

Key Biodiversity Areas, KBAs, are areas that meet certain criteria related to threatened or geographically restricted biodiversity, ecological integrity, biological processes and/or irreplaceability. KBAs are identified through a consultative, scientific process based on a global standard with quantitative thresholds. The approach is governed by an alliance of organisations including BirdLife International, IUCN, Conservation International, Global Environment Facility, World Wildlife Fund for Nature, and Wildlife Conservation Society. As Key Biodiversity Areas are identified on much the same grounds as High Conservation Value 1, they may be considered likely HCV candidates.

Intact Forest Landscapes, IFLs, are remaining large areas of forests and forest mosaics, minimally influenced by human economic activity and without signs of recent logging, mining or infrastructure visible on satellite imagery. IFLs store lots of carbon in the trees and in the soil and have capacity to host large proportions of the regional fauna and flora. All IFLs are considered areas of High Conservation Value (HCV).

Global Forest Watch https://www.globalforestwatch.org/map/ is a user-friendly platform that can be used to assess mill and agriculture area proximity with Protected Areas data (under the ‘Land Use’ data category), Key Biodiversity Areas are (under the ‘Biodiversity’ category), and Intact Forest Landscapes (under the ‘Landcover’ category).

Ramsar sites are freshwater, brackish (slightly salty) and marine wetlands of international importance for conservation of biodiversity designated under the Convention on Wetlands (Ramsar Convention), an intergovernmental treaty for conservation and wise use of wetlands and their resources. To get more information on the location of Ramsar sites, visit https://rsis.ramsar.org/ and click on the specific Ramsar site to generate a fact sheet, opening as 'Overview' with summary information and a satellite map of the area.



IUCN threatened Ecosystems are ecosystems that have been classed as Critically Endangered, Endangered, or Vulnerable according to the IUCN Red List of Ecosystems Categories and Criteria global standard for assessing the conservation status of ecosystems, applicable at local, national, regional and global levels. The Red List of Ecosystems evaluates whether ecosystems have reached the final stage of degradation (a state of Collapse), whether they are threatened at Critically Endangered, Endangered or Vulnerable levels, or if they are not currently facing significant risk of collapse (Least Concern). The interactive map can be accessed https://assessments.iucnrle.org/ to see if there are any assessments in the region –as there are not interactive maps of the indicative distribution of the ecosystems, use search function at the top of the page to search by country or region to rapidly evaluate if an assessed ecosystem is relevant or
may occur in or near the unit of certification. If so, the assessment report can be accessed which provides more detail on the threatened ecosystem, with images, maps of indicative distribution, and information on threats. As IUCN Threatened Ecosystems relies upon specified ecosystem assessments, not all global ecosystems have been assessed.
Consequently, the global list provides a snap-shot in time that is constantly being updated as more assessments occur.

Cane production is not permitted in protected areas.
Cultivation that is already happening within other priority conservation areas is not necessarily excluded (subject to local and national regulations and legislation). However, as these areas are designated due to their critical ecosystems and sensitivity, it will
be essential for the mill and growers to ensure that activities associated with cane production do not have a negative impact on the conservation features including natural habitats associated with these areas. These natural habitats may be indirectly affected also by the consequences of production activities occurring outside the conservation area
e.g. leaching of agrochemicals into a nearby Ramsar site, or timber harvesting in IFLs.

If the answer is yes to any of the above, **expert advice should be sought** to assess what direct and indirect impacts the mill or cane production in the unit of certification may have on these areas (their associated biodiversity and natural habitats) and identify appropriate mitigation measures. The output should include a description of the main ecosystems associated with these areas, the potential on-farm and off-farm impacts and mitigation measures. This information will be added to the **'Key habitat'** table, and it may be possible to develop 'indicative' proxy maps for these habitats using the landcover or vegetation maps.

Focal species

The species-richness of plants and animals in an area may be huge. To an extent, this holds true also for intensively cultivated areas, even though species numbers are usually much lower than in more natural habitats. There is no way that even single experts, much less growers without due taxonomic training, can identify more than a fraction of this diversity, and in-depth knowledge of flora and fauna is only possible through the work of teams of experts – a very time-consuming and costly exercise.

Recognising these constraints, the focal species approach is less about species inventories and monitoring, and more about outreach, capacity-building and attitudes. A limited set of focal species, selected to be relevant in the local context, serve as vehicles for stimulating an interest in conservation of animals and plants. An associated set of recommended precautionary practices, designed to support and where possible maintain these species and their habitats where they occur, provide a means for growers to take concrete beneficial actions, individually or collectively.

As part of the unit of certification mapping and information compilation for 4.1.1, the operator can compile a short list of focal species relevant to the mill and agriculture area and develop simple field guides of these species that will be used to support operators identify them and develop their BMP. If the mill does not have in-house capacity to compile this information, support from a local expert or environmental organisation should be sought.

Selecting Focal Species

Focal species may be resident or migrant, single species or (taxonomically or functionally) related groups of species like ‘turtles’, ‘storks’, ‘mongooses’, ‘bees’ or ‘figs’. Ideally, focal species should be selected to meet following criteria:

- Be readily noted where present, and **easy to recognise** and distinguish either as a distinct species, or as belonging to a certain grouping of species;
- Together represent a range of organisms, often with an emphasis on birds and mammals, but ideally including also examples of reptiles, insects and plants;
- Include species nationally protected, IUCN-classified rare, threatened and endangered (RTE) or CITES listed and other species of conservation concern (an HCV indicator), where relevant;
- Be **familiar to growers** and have names in local languages;
- Link to **concrete precautionary practices** that growers themselves can take to support the species, or as part of a wider initiative such as a ‘citizen- science’ approach;
- Serve to connect farm sites and surrounding landscapes as some species will have home-ranges /territories that go far beyond the scale of single farms or even groups;
- Help to stimulate an interest in biodiversity and conservation, including how to address and mitigate human-wildlife conflicts where relevant.

In practice, it may be difficult to select focal species which conform to all the above requirements. Finding good conservation-RTE species that fit with intensively cultivated landscapes may be particularly challenging, as such landscapes often only host ‘tough’ species, resilient to human activities (at least up to the present day – situations may become more precarious in the future as landscapes are even more intensively used or impacted by the effects of climate change). On balance, the most important criterion is to select species that are **perceived as relevant by local growers.** Thus, what qualifies as
a good set of focal species is necessarily relative: in areas close to wildlife reserves, national parks and other larger tracts of natural habitats in decent conditions, iconic ‘flagship’ RTE species may be present. Conversely, in intensively cultivated landscapes more common and mundane species may have to be chosen in order to resonate with the growers’ contexts.

Species of conservation concern (HCV 1)

Species of conservation concern that occur in the growing landscape and meet the criteria of being recognisable and relevant to growers, should be included as Focal Species and would qualify as candidate HCV 1 species.

Nationally or internationally recognised conservation areas are often established due to the presence or concentration of species of conservation concern: species that are on the IUCN Red List for endangered species, are nationally protected, and/or are CITES (Convention on International Trade in Endangered Species) listed. Where a Protected Area, Key Biodiversity Area, or Ramsar site has been identified (see above section), it is recommended that expert advice is sought to evaluate the direct and indirect impacts cane production in the unit of certification may have on these areas. The expert should also provide a list of candidate species of conservation concern associated with these areas, that may qualify as focal species as per the above criteria.

Practices that often impact species of conservation concern include:

- Bushmeat hunting for consumption or sale,
- Trade and trafficking in animal or plant parts,
- Conflicts with conservation species,
- Habitat degradation or clearing.

Mill staff and growers may know whether any of these threats are relevant within their mill and agriculture area. Local authorities, experts or NGOs may provide additional information on whether potentially affected species are legally protected (or have another conservation status), what other regulations apply, and on strategies for mitigating impacts.

Precautionary practices

For each Focal Species selected, basic information should be collated on habitats, ecology and conservation status and threats. This information is a necessary backdrop for growers. It also serves to inform and suggest precautionary practices that growers can take themselves to mitigate threats. Such practices may be taken by individual growers themselves, or by workers, or even more broadly in the wider community e.g. through schools or local nature clubs. For some species, positive impacts may be augmented by wider producer cooperation at the local, regional or national level.
Species that survive well or even thrive in intensively managed landscapes are unlikely to be under any direct threats, and so need little in terms of specific mitigation – precautionary practices in such cases will be more about maintaining and promoting natural habitats in the area on and surrounding the mill and minimising negative impacts from e.g. pesticides and herbicides.

Rare and decreasing species on the other hand, often face very specific threat factors. A scary example is the indiscriminate treating of cattle with the anti-inflammatory drug Diclofenac. Residues of the substance remain in body tissues, making carcasses lethal to scavenging vultures and eagles. In little over ten years, this practice has wiped out 99% of India’s once common white-backed vultures!

Focal species may perform important environmental services (e.g. pollination or predation on pest species), be neutral in terms of human utility or concern, or cause (sometimes massive) problems in terms of crop-raiding, predation on cattle and livestock or even be severe threats to human lives. Discussing how to resolve such conflicts with the people concerned is key, common themes being finding means of keeping crop raiders out of cultivated fields, and of minimising risks that large predators attack livestock or humans. Strategies may include a range of measures like combating
poaching in reserves (depleting the natural prey base and forcing predators to look for food in surrounding areas); fencing; night-corralling (confining animals at night); natural or crop buffer (for example strips of cane left for elephant to graze on and reduce their interest in entering further the whole production area) and training in conflict-avoiding behaviour. However, local people should also be adequately compensated for losses of crops or livestock, as well as get a share of the revenues generated by wildlife tourism, e.g. by employment as reserve guides and guards. Examples from all over the world demonstrate that successful human-wildlife coexistence require support for those people that are impacted.

Outreach

A list of 10-20 **Focal Species** should be developed with support from experts or collaborators such as wildlife organisations and research institutions. While lists can be generated for individual mills, it is also possible to coordinate this between mills within a region. An associated **field guide** should be developed, presenting for each species:

- Species name and description including pictures,
- Habitat and basic species biology,
- Grower related practices that may threaten the species (both direct and indirect impacts such as habitat degradation), relevant legislation and regulations,
- Measures that serve to reduce these threats.

Where possible, maps of where these species have been observed or are likely to occur across the unit of certification (proxy species distribution maps) may be generated based on the vegetation or land cover map. While these are only indicative, they may inform growers if these species are likely to be in or near their production lands (if they are not already aware!). Mapping is most feasible for species with specific habitat requirements, e.g. forest-dependant monkeys, or bird species that rely upon riparian vegetation and wetlands. Proxy mapping is more challenging for species that are generalists or use a mosaic of habitats, e.g. wild cats that inhabit natural forests and grasslands but are also moving through agricultural areas.

Species that cause economic losses or threaten livestock or people may generate very heated discussions with growers and communities in villages and areas where those species may occur. Outreach around these species should be managed carefully to avoid undermining and compromising positive efforts for focal species. Advice should be sought from NGOs who have experience and resources in community dialogue and outreach around these species, that can be integrated into the Bonsucro focal species outreach materials.

Good pictures can often be downloaded to tablets or smartphones from the internet, remembering to respect copyright and image use terms and conditions. The following table can be used to summarise key information on the Focal Species and presented as field guides used by growers to assess whether any of these species are present, the types of threats and mitigation measures.

Focal Species potentially present in the unit of certification area	Threats associated with cane production activities	Measures that can be taken by growers to mitigate on/off farm impacts
[photo] Local name and significance Where relevant protection status (Nationally protected/IUCN/CITES) – HCV 1 species Where it is found and **habitat**, with proxy distribution map across unit of certification if available	[e.g. hunted, collected, traded, persecuted; habitat degradation; pollution]	Refer also to relevant legislation concerning the species [e.g. outreach with workers on hunting regulations and no-hunting signage, wide no-spray zones around water bodies]

GLOBAL SOCIAL HCV INDICATORS

UNESCO WORLD HERITAGE SITE

The United Nationals Educational and Scientific Organisation (UNESCO) World Heritage Site (WHS) are sites of outstanding universal cultural or natural value as defined in an international convention from 1972, recognised by almost all countries. Implementation of the convention is overseen by an elected committee representing ratifying countries.

An interactive map of World Heritage sites is available at https://whc.unesco.org/en/list/. Symbol shapes and colours differentiate between cultural, natural and mixed sites, and indicates which sites are in danger (red). Click on a certain site to get a grey and black box with the name of the site. Click on the 'library' / dock symbol next to the name to open a site information sheet (available in eight languages) with a brief description, and a summary of the values and conservation status of the area. Designated due to their social values UNESCO World Heritage sites usually qualify as HCV 6.

As part of the unit of certification mapping, the mill should assess if there is a UNESCO WHS < 5km from the area on and surrounding the mill and agriculture area and include this as one of the priority conservation areas.

If yes, expert advice should be sought (e.g. from UNESCO WHS submitting body, or national UNESCO Focal Point) on the relevant management plans which growers should be aware of, and incorporate assessing impacts and management practices into their BMP.

PART 2: MITIGATING RISKS TO HCVS IN ON-GOING CANE CULTIVATION

The additional operational guidance for operators to develop the BMP (for 4.1.2) presents a simple biodiversity questionnaire to support developing the BMP while using the materials compiled under 4.1.1. In completing the biodiversity questionnaire, the grower will be identifying indicators of the presence of HCV (HCV indicators), and therefore the need to implement HCV precautionary practices. Below are the environmental and social HCV indicator questions that figure in this questionnaire, with additional information provided here to support compiling materials to help growers answer the questions.

Environmental HCV risks

HCV indicator question: Are the farmlands <5km from a priority conservation area?

The unit of certification map with priority conservation areas, will allow growers to identify if their cane production lands are in or near any of the listed areas. If yes, the grower should access information from:

- the **Key Habitats** table, with the critical ecosystems associated with these areas, and
- from the **Focal Species** table, for species that are associated with these areas

HCV indicator question: Are there any of the Focal Species?

The grower can use the Focal Species field guides, to identify if any of the listed Focal Species occur or occurred on or near their farm lands.

Social HCV risks

The following three HCV risk questions in the grower's biodiversity questionnaire concern local social HCV risks, access to clean water and the basic needs of **local** communities; defined as indigenous and tribal peoples, or other local communities with traditional ties to the lands.

HCV indicator question: Are there fields, housing or infrastructure closer than 50 m to a river, stream, lake, pond or well used as a main source of drinking or household water by people on, or off the farm?

The unit of certification land cover map will allow growers to identify how their production lands and activities are located in relation to major water bodies. Riparian vegetation serves an important function in maintaining water quality and quantity, by reducing agricultural run-off and soil erosion into water bodies. An indicator of **HCV risks** is where **local communities depend upon water bodies** for domestic purposes, and the maintenance and/or restoration of riparian vegetation is one of the key measures for addressing this risk. Where the Water Stewardship Plan (indicator 4.3.2) and/or stakeholder mapping (indicator 1.2.1) identify that local communities in or near the area on and surrounding the mill and agriculture area rely upon local water resources, HCV risk areas will be the water bodies and their buffer zones.

These buffer zones[3] should have permanent vegetation; the unit of certification map compiled under 4.1.1 or farm maps developed under 4.1.2 can indicate where vegetation is already established (therefore should be maintained as part of the growers BMP), as well as areas across the unit of certification where restoration should be prioritized due to the absence or degraded state of riparian vegetation.

Note on Riparian vegetation for supporting habitat connectivity

In additional to protecting water quality and quantity, riparian vegetation is also important for biodiversity, protecting aquatic biodiversity and downstream critical aquatic ecosystems (HCV 3) such as wetland areas, while also providing habitat for species and supporting habitat connectivity. Even in the absence of HCVs being associated with water bodies, connected riparian vegetation is a key biodiversity strategy in highly fragmented landscapes where natural ecosystems have to a greater extent been lost and/or degraded. It is recommended to have a wider perspective to riparian areas, with collaborative efforts with the range of land-users, both certified and non-certified farms, to promote riparian restoration where this has been lost or is degraded, and seeking input from experts for this.

[3] Appropriate buffer zone widths vary depending upon size of water body and slope into the water body, and national regulations should also be respected. A useful reference document is the Guide for the management and rehabilitation of riparian reserves published by RSPO https://rspo.org/news-and-events/announcements/rspo-guide-on-management-and-restoration-of-riparian-reserves

HCV indicator question: Do other people have customary or legal rights to use areas (e.g. natural resources) on the farm?

HCV indicator question: Do growers use communal or public lands e.g. for cattle grazing, timber collection, or hunting?

To support operators in responding to the above three HCV indicator questions, the mill should draw upon outputs of Indicator 1.2.1. This indicator requires mapping of internal, external and vulnerable stakeholders across the unit of certification, which includes indigenous, tribal and traditional communities. Where local communities and indigenous peoples have been identified in the stakeholder mapping, this represents an elevated risk, requiring follow-up at the farm level to confirm the risk on or near the production land, and therefore need to identify and implement mitigation measures