







This document builds on a series of Good Practice guides for High Conservation Value (HCV) practitioners and auditors. Over the past few years, as global HCV definitions are amended and as the HCV approach has been adopted by ever more and diverse initiatives, it is useful to take stock of current guidance and provide an update. This document does not intend to completely replace the existing guidance, but it aims to widen the scope of use of HCV and to provide guidance based on practical field experience. In recent years there has been growing concern amongst members of the HCV Resource Network, HCV practitioners and other interested parties, that the HCV approach has not been applied consistently across different land use sectors or geographies. The identification of values within a specific landscape and site should be based on a common interpretation of the HCV definitions, as set out in this document. This document is intended for HCV assessors, especially those working without the benefit of national interpretations, to provide guidance on interpreting the HCV definitions and their applications, with the goal of providing some degree of standardization in use of the HCV approach.

#### **Editorial Team**

Ellen Brown, Nigel Dudley, Anders Lindhe, Dwi R. Muhtaman, Christopher Stewart and Timothy Synnott.

The editors would like to acknowledge valuable input on content and structure from Robin Abell and Michael Senior. Thanks also go to several individual reviewers who contributed thoughtful comments and suggestions during the draft phase. Finally, thanks goes to Fern Lee for her creativity and patience in formatting and designing the document.

Suggested citation: Brown, E., N. Dudley, A. Lindhe, D.R. Muhtaman, C. Stewart, and T. Synnott (eds.). 2013 (October). Common guidance for the identification of High Conservation Values. HCV Resource Network.

## Background to this document

High Conservation Value (HCV) definitions were first set forth by the Forest Stewardship Council (FSC) in version 4.0 of its Principles and Criteria (P&C). The formalisation of the six categories of the HCV approach and guidance for interpretation and application was elaborated in 2003 by Proforest in its HCV global toolkits. In 2005, the newly established HCV Resource Network (HCVRN) adopted a simplified version of the HCV toolkit formulations in its founding Charter and widened their scope from “HCV Forest” to “HCV Areas” i.e. both forest and non-forest ecosystems. Between 2009 and 2011, the HCVRN and FSC worked together to revise the HCV definitions, involving experts and stakeholders from other sustainability schemes. This process, resulting in the FSC P&C version 5.0, brought a focus on values in all ecosystems, not only forests and now includes the six HCV definitions in the Principle 9 text (previously definitions were in an abridged version in the glossary). For a full explanation of the evolution of the HCV definitions see Annex 1.

Since the second half of 2012 Proforest has been engaged in a consultative process to develop a practical user manual for the common interpretation and identification of HCVs, known as the “HCV Common Guidance for Identification”. This document stems from a decision by the HCVRN and FSC to develop updated and common guidance for the interpretation and identification of HCVs globally, for any type of ecosystem, and across all natural resource sectors and standards. It builds on past guidance documents produced by Proforest in 2003 and 2008<sup>1</sup>, a paper by Timothy Synnott<sup>2</sup> (based on work carried out in 2011 and 2012 by FSC in partnership with the HCVRN), and on consultation with HCV experts and interested stakeholders. The HCVRN encourages the use of this document and would be happy to hear about experience with putting the guidance into practice. Feedback will help to improve future versions of this guidance. Please send comments or queries to [info@hcvnetwork.org](mailto:info@hcvnetwork.org)

The HCVRN is a network of members, including representatives from producer companies, NGOs, research organisations and consultants, auditors and other practitioners, who share a mission to conserve critical social and environmental values, as part of responsible natural resource management. Formed in 2005, The HCVRN is a charter-based organisation governed by a Steering Group composed of environmental and social NGOs, private sector representatives, and multilateral organisations. The HCVRN provides services such as guidance documents, peer reviews of HCV reports, and training. For more information visit [www.hcvnetwork.org](http://www.hcvnetwork.org)

1 Proforest 2008 a & b

2 Synnott, T. et al 2012

Production of this manual was led by Proforest on behalf of the HCV Resource Network.



The following organisations support the objectives and charter of the HCV Resource Network.



Production of this document was supported through funding from: WWF Sweden, WWF International, Tetra Pak and Proforest.



# List of Acronyms and Abbreviations



---

AZE – Alliance for Zero Extinction

---

CARPE – Central African Regional Program for the Environment

---

CBD – Convention on Biological Diversity

---

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora

---

CR – Critically Endangered (IUCN Red List)

---

EC – European Community

---

EN – Endangered (IUCN Red List)

---

ESIA – Environmental and Social Impact Assessment

---

EU – European Union

---

FPIC – free, prior, and informed consent

---

FSC – Forest Stewardship Council

---

HCV – High Conservation Value

---

HCVNI – High Conservation Value National Interpretation

---

HCVRN – High Conservation Value Resource Network

---

GIS – Geographic Information Systems

---

IBA – Important Bird Areas

---

IBAT – Integrated Biodiversity Assessment Tool

---

IFC – International Finance Corporation

---

IFL – Intact Forest Landscape

---







---

IPA – Important Plant Area

---

IUCN – International Union for Conservation of Nature

---

KBA – Key Biodiversity Area

---

Km - kilometre

---

MU – management unit

---

NGO – non-governmental organisation

---

NTFP – Non-Timber Forest Product

---

P&C – Principles and Criteria

---

PRA – Participatory Rural Appraisal

---

PS – Performance Standard

---

RTE – rare, threatened or endangered

---

RSB – Roundtable on Sustainable Biomaterials

---

RSPO – Roundtable on Sustainable Palm Oil

---

RTRS – Roundtable on Responsible Soy

---

SCP – systematic conservation planning

---

TNC – The Nature Conservancy

---

UNESCO - United Nations Educational, Scientific, and Cultural Organisation

---

VU – vulnerable (IUCN Red List)

---

WRI – World Resources Institute

---

WWF – Worldwide Fund for Nature

---



# Content

## Part One

|          |                                                                      |           |
|----------|----------------------------------------------------------------------|-----------|
| <b>1</b> | <b>Introduction</b>                                                  | <b>3</b>  |
| 1.1      | The Six High Conservation Values                                     | 3         |
| 1.2      | The High Conservation Value approach                                 | 4         |
| 1.2.1    | Identification                                                       | 4         |
| 1.2.2    | Management                                                           | 4         |
| 1.2.3    | Monitoring                                                           | 5         |
| 1.3      | Common guidance: using HCV across different ecosystems and land uses | 5         |
| 1.3.1    | HCVs in different ecosystems                                         | 5         |
| 1.3.2    | Different land uses: commodity production                            | 7         |
| 1.3.3    | Different countries: HCV National Interpretations                    | 8         |
| <b>2</b> | <b>Best practice considerations for HCV assessments</b>              | <b>11</b> |
| 2.1      | Scale, intensity and risk                                            | 11        |
| 2.2      | Responsibility to the HCVRN Charter                                  | 14        |
| 2.3      | Location and landscape                                               | 15        |
| 2.4      | HCV methods and data sources                                         | 16        |
| 2.4.1    | Evaluating the need for a scoping study                              | 16        |
| 2.4.2    | Step-wise screening                                                  | 16        |
| 2.5      | Stakeholder consultation                                             | 19        |
| 2.6      | Interpretation of assessment findings                                | 20        |
| 2.6.1    | Recognising significant values                                       | 20        |
| 2.6.2    | Using the precautionary approach                                     | 21        |



## Part Two

|                                                          |           |
|----------------------------------------------------------|-----------|
| <b>3 Identification of the six HCVs</b>                  | <b>25</b> |
| <b>3.1 HCV 1: Species diversity</b>                      | <b>25</b> |
| 3.1.1 Key terms and concepts                             | 25        |
| 3.1.2 Indicators and data sources                        | 27        |
| 3.1.3 Case study                                         | 29        |
| <b>3.2 HCV 2: Landscape-level ecosystems and mosaics</b> | <b>30</b> |
| 3.2.1 Key terms and concepts                             | 30        |
| 3.2.2 Indicators and data sources                        | 31        |
| 3.2.3 Case study                                         | 33        |
| <b>3.3 HCV 3: Ecosystems and habitats</b>                | <b>34</b> |
| 3.3.1 Key terms and concepts                             | 34        |
| 3.3.2 Indicators and data sources                        | 35        |
| 3.3.3 Case study                                         | 36        |
| <b>3.4 HCV 4 Ecosystem services</b>                      | <b>37</b> |
| 3.4.1 Key terms and concepts                             | 37        |
| 3.4.2 Indicators and data sources                        | 40        |
| 3.4.3 Case study                                         | 41        |
| <b>3.5 HCV 5 Community needs</b>                         | <b>42</b> |
| 3.5.1 Key terms and concepts                             | 42        |
| 3.5.2 Indicators and data sources                        | 44        |
| 3.5.3 Case study                                         | 47        |
| <b>3.6 HCV 6 Cultural values</b>                         | <b>48</b> |
| 3.6.1 Key terms and concepts                             | 48        |
| 3.6.2 Indicators and data sources                        | 49        |
| 3.6.3 Case study                                         | 51        |
| <b>4 Preparation of the HCV assessment report</b>        | <b>53</b> |

|                                       |           |
|---------------------------------------|-----------|
| <b>5 References</b>                   | <b>55</b> |
| <b>Annexes</b>                        | <b>56</b> |
| <b>1 Evolution of HCV definitions</b> | <b>56</b> |
| <b>2 HCVs in grasslands</b>           | <b>58</b> |
| <b>3 HCVs in freshwater systems</b>   | <b>60</b> |
| <b>4 Image credits</b>                | <b>63</b> |

# How to use this document

This document is intended primarily for HCV assessors<sup>3</sup>, resource managers, and auditors. It provides guidance on the interpretation of the HCV definitions and their identification in practice, to achieve standardization in use of the HCV approach. The document can also help developers of HCV national interpretations (HCV NIs) by providing a reference against which to adapt definitions, data sources and examples to national contexts. It is also useful for stakeholders who wish to evaluate or critique HCV assessments as part of a stakeholder consultation process or for the good governance of a certification scheme.

It is not a binding document, but rather a guide to “best practice” which must be followed according to different criteria including: scale, intensity and risk of the project<sup>4</sup>, budget and technical capacity, etc. Further details on requirements relating to HCVs should be sought from the relevant certification scheme.

**Part I** provides the context for how the HCV approach should be used, including advice on HCV assessments. A good quality HCV assessment must interpret findings using a precautionary approach (see 2.6.2), quality stakeholder consultation (see 2.5), with consideration of the wider landscape (see 2.3) and the scale, intensity and risk of the proposed development (see 2.1). When interpreting the findings, it is necessary to understand the concept of significance (see 2.6). **Part II** provides detailed definitions and guidance on interpretation and identification of the six HCV categories. Part II includes potential data sources and indicators for HCVs and provides illustrative case studies and examples for each HCV category.

---

<sup>3</sup> The term “assessor” is used throughout the document, but can refer generally to the person or team who is seeking to interpret HCV definitions and to identify HCVs in practice. Therefore “assessor” can mean the person or team undertaking an HCV assessment or audit – which could be an independent body or the company or organisation, or an auditor.

<sup>4</sup> See section 2.1



# How to use this document

Boxes placed throughout the document provide different kinds of information ranging from definitions, to important information, to interesting issues beyond the direct scope of HCV identification.



This kind of box is used for the official definition of each HCV and other definitions



This kind of box is used to indicate examples and interesting issues



This kind of box is used to indicate important facts or information







Part I provides the context for how the HCV approach should be used, including advice on HCV assessments. A good quality HCV assessment must interpret findings using a precautionary approach (see 2.6.2), quality stakeholder consultation (see 2.5), with consideration of the wider landscape (see 2.3) and the scale, intensity and risk of the proposed development (see 2.1).





# Part One

|          |                                                                      |           |
|----------|----------------------------------------------------------------------|-----------|
| <b>1</b> | <b>Introduction</b>                                                  | <b>3</b>  |
| 1.1      | The Six High Conservation Values                                     | 3         |
| 1.2      | The High Conservation Value approach                                 | 4         |
| 1.2.1    | Identification                                                       | 4         |
| 1.2.2    | Management                                                           | 4         |
| 1.2.3    | Monitoring                                                           | 5         |
| 1.3      | Common guidance: using HCV across different ecosystems and land uses | 5         |
| 1.3.1    | HCVs in different ecosystems                                         | 5         |
| 1.3.2    | Different land uses: commodity production                            | 7         |
| 1.3.3    | Different countries: HCV National Interpretations                    | 8         |
| <b>2</b> | <b>Best practice considerations for HCV assessments</b>              | <b>11</b> |
| 2.1      | Scale, intensity and risk                                            | 11        |
| 2.2      | Responsibility to the HCVRN Charter                                  | 14        |
| 2.3      | Location and landscape                                               | 15        |
| 2.4      | HCV methods and data sources                                         | 16        |
| 2.4.1    | Evaluating the need for a scoping study                              | 16        |
| 2.4.2    | Step-wise screening                                                  | 16        |
| 2.5      | Stakeholder consultation                                             | 19        |
| 2.6      | Interpretation of assessment findings                                | 20        |
| 2.6.1    | Recognising significant values                                       | 20        |
| 2.6.2    | Using the precautionary approach                                     | 21        |



**Section 1** introduces the six HCV definitions and provides an overview of the HCV approach. This section focuses on how the HCV approach can be applied across ecosystems, commodity production schemes and geographies. Some general information is provided on how the HCV approach can be adapted for use in different ecosystems with a focus on forests, grasslands and freshwater systems. Next, attention is given to how some of the most common certification schemes are including the HCV approach and finally, how HCVs can be adapted to the country level with HCV National Interpretations.





# 1

## Introduction

Since the High Conservation Value (HCV) approach was first developed by the Forest Stewardship Council (FSC), it has proven useful for identifying and managing environmental and social values in production landscapes. HCV is now widely used in certification standards (forestry, agriculture and aquatic systems) and more generally for resource use and conservation planning. In recent years there has been growing concern amongst members of the HCV Resource Network (HCVRN), HCV practitioners and other interested parties, that the approach has not been applied consistently across different natural resource sectors or geographies. The identification of values within a specific management unit or landscape should be based on a **common interpretation of the HCV definitions**. The global HCV definitions have been recently amended as part of the revision of the FSC P&C (2012) and the HCV approach has been adopted by ever more and diverse initiatives, so that it is useful to take stock of current guidance and provide an update. This document does not intend to completely replace existing guidance documents, but it aims to widen the scope of use of HCV to other ecosystems and to provide guidance on the updated HCV definitions, as well as examples from practical field experience.

### 1.1 The Six High Conservation Values

**An HCV is a biological, ecological, social or cultural value of outstanding significance or critical importance.** The six categories of HCVs are<sup>5</sup>:

#### Box 1: The Six High Conservation Values

##### 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 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.

##### HCV 2 Landscape-level ecosystems and mosaics

Large landscape-level ecosystems and ecosystem mosaics 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 soils 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.

<sup>5</sup> The HCVRN adheres to the HCV definitions as detailed in the FSC Standard version 5.0 (2012). Refer to Annex 1 for details on how HCV definitions have been updated.



The six categories of HCVs have been applied principally to land-based production practices such as forestry and agriculture. These sectors are the primary focus of this document, but the basic guidance is applicable to other sectors (e.g. aquaculture and marine systems).

## 1.2 The High Conservation Value approach

The FSC developed the HCV concept as part of its standard (Principle 9) to ensure maintenance of significant or critical environmental and social values in the context of forest certification. Since its origin in forestry, the HCV concept has been adopted by other certification schemes and by other organisations and institutions that aim to maintain and/or enhance significant and critical environmental and social values as part of responsible management. HCVs demand a greater degree of protection<sup>6</sup> to ensure their long-term maintenance, particularly if they may be negatively impacted by practices undertaken in logging concessions, agricultural plantations or other production sites. This involves greater efforts to **identify** them, through more intensive assessments and stakeholder consultation, through greater attention to deciding and implementing appropriate **management** measures, and through **monitoring** both the implementation and effectiveness of these measures<sup>7</sup>.

### 1.2.1 | Identification

Identification involves interpreting what the six HCV definitions mean in the local or national context and deciding which HCVs are present in the area of interest (e.g. management unit (MU), plantation, concession, etc.) or which HCVs in the wider landscape may be negatively impacted by project activities (e.g. impacts on water or wetland HCVs may occur well beyond the MU or plantation border). This is done through an HCV assessment which consists of stakeholder consultation, an analysis of existing information and the collection of additional information where necessary. HCV assessments should result in a clear report on the presence or absence of values, their location, status and condition, and as far as possible should provide information on areas of habitat, key resources, and critical areas that support the values. This will be used to develop management recommendations to ensure that HCVs are maintained and/or enhanced.

### 1.2.2 | Management

HCV Management Areas are areas in a site, MU or landscape for which appropriate management decisions must be taken and implemented in order to maintain or enhance an HCV. For purposes of mapping and planning, it is necessary to distinguish between the locations of HCVs, which may be quite small and sometimes confidential (e.g. breeding colonies of rare bats or sacred trees) and the management areas where appropriate decisions and actions are needed, sometimes over larger areas (see Box 2). Designing a management regime for HCVs should include investigation of existing and potential threats (e.g. threats from proposed management activities, such as logging operations or plantation establishment, or from external activities such as hunting, illegal logging or construction of a new road or dam) and establishment of management requirements. This can include delineating areas that need total protection and identifying areas that can be used for production provided that management is consistent with maintaining or enhancing HCVs (e.g. anti-poaching controls or fire management policies).



<sup>6</sup> Protection, in this sense, does not prohibit use or production activities. The protection or maintenance of the value is what matters.

<sup>7</sup> This document focuses on the first part of the HCV approach: identification (see Part II). Guidance on HCV management and monitoring will be provided in a subsequent document.



### Box 2: An example of an HCV Management area

In Costa Rica, stands of Alemandro (*Dipteryx panamensis*), are the preferred nesting and feeding sites of the endangered Great Green Macaw (*Ara ambiguus*). The breeding birds are designated as HCV 1, and the stands of trees are identified as essential for the maintenance of the birds. The appropriate management decisions may include a range of controls covering different HCV Management Areas, for example:

- Within 100 m of the tree stands: any human entry or non-timber forest product (NTFP) collection is prohibited during the nesting season.
- Within 500 m of the tree stands: logging and roads are prohibited.
- Anywhere in the management unit: collecting these birds is prohibited.

### 1.2.3 | Monitoring

A monitoring regime should be established to ensure that management practices effectively maintain and/or enhance the HCVs over time. The monitoring regime needs to translate the strategic objectives of the management regime into operational objectives. Appropriate indicators for these operational objectives must be chosen to assess the status of the HCVs, and thresholds for action to ensure that the HCVs are maintained or enhanced. Indicators and thresholds for action are likely to be site and/or country-specific. This document focuses on identification, but a common guidance document for HCV management and monitoring is due out in early 2014 and will be available on the HCVRN web site.

## 1.3 Common guidance: using HCV across different ecosystems and land uses

This document aims to provide common guidance for HCV identification, which can be applied to different ecosystems, different commodities (with a focus on forestry and agriculture) and across different geographies. The following sections provide explanations of how HCVs are relevant in different ecosystems, how the HCV concept is used in commodity production schemes and how HCV national interpretations are useful for adapting the general definitions to a country context.

### 1.3.1 | HCVs in different ecosystems

In responsibly managed forests (e.g. logging concessions), the areas supporting HCVs will likely remain surrounded by continuous forest cover or forests in various stages of succession. However, there is a growing demand for HCV assessments in grasslands and other ecosystems, both for managing the impacts of existing agricultural and tree plantations, and for responsibly planning the expansion of plantations (e.g. for RSPO-certified palm oil). In this context, the HCV process is used as a safeguard against the destruction of critical values that could occur through conversion of natural vegetation to plantation forestry or agriculture. Whatever the sector, an HCV assessment should consider all ecosystems – terrestrial and aquatic – that occur within a production site, and within the larger area of influence. This document provides examples and guidance for major ecosystem types such as forests, grasslands and freshwater ecosystems.





### Forests and forest mosaics

Forests are the original context for the development of the HCV concept. All forests are valuable, but some are more valuable than others. To make this concept operational, there was a need to define “exceptional” or “significant” forest values. Though the quality and consistency of HCV assessments, audits and management may vary, the scale of application of the concept is impressive and important for responsible forest management. As of October 2013, there are 183,068,328 ha of FSC certified forests in 80 countries<sup>8</sup>. Forests harbour biodiversity, provide habitat and ecosystems services. Millions of people worldwide depend on forests for livelihood needs. In forestry, HCV is used to identify areas for protection or where special management practices will be needed. Likewise, in agricultural plantations, HCV identification can help protect high value forest areas which harbour important species or provide ecosystem services. In an agricultural setting, HCV forest areas would be maintained and protected against conversion. In some cases, where forests provide subsistence or other basic needs for local communities, these could only be converted if access was negotiated through a rigorous FPIC (Free Prior and Informed Consent – see Box 13) process.



### Grasslands

Concern about the rate at which grasslands<sup>9</sup> are being converted into plantations, particularly for soy, oil palm and pulp has driven wider uptake of the HCV concept as a means of identifying the most important grassland habitats. The existence of certification schemes for these industries and the integrated nature of the market means that some companies involved in debates about crop and biofuels plantations are already familiar with the HCV concept through forest operations or discussions in RSPO. European Union legislation aimed at promoting sustainability in biofuels production, and explicitly at protecting grassland values (see Bowyer *et al.* 2010), is providing further impetus. An HCV approach allows a richer picture of the ecosystem than a simple distinction between native and non-native grasslands, which is often used at present.



### Freshwater

Freshwater systems will be relevant to all land-based production systems. Some agricultural and plantation developments rely on irrigation from surface or underground sources, but even in non-irrigated situations there is the possibility of impacts to freshwater systems through changes to water quality, quantity, and other habitat attributes (e.g. loss of riparian vegetation valuable for shading and organic matter inputs, fragmentation of systems by roads, water abstraction for production practices other than irrigation). Even if production is land-based, its potential to affect connected freshwater systems requires that those systems be included within HCV assessments. This will require assessment of potential HCVs for any freshwaters that may be affected by production, whether or not they occur within the production site. It is important that for any freshwater HCV assessment, the region of analysis (or hydrogeographical scope) should be defined *before* identifying HCVs or the areas required for their maintenance. This may be best accomplished through a scoping study (see 2.4.1).

<sup>8</sup> <https://ic.fsc.org/facts-figures.19.htm>

<sup>9</sup> The term “grasslands” is used here to denote a wide variety of non-forested terrestrial systems, which could include heath, tundra and arid lands.



### 1.3.2 | Different land uses: commodity production

#### Certification schemes

This guidance document is applicable across certification schemes, but HCV assessors should consult the relevant standards for requirements on HCV reporting and assessor credentials. Table 1 provides examples of where HCV is present in certification standards and other supporting principles which complement HCVs or provide additional safeguards related to environmental and social values.

| TABLE 1: HCV IN DIFFERENT COMMODITY CERTIFICATION STANDARDS                                                                              |                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CERTIFICATION STANDARD                                                                                                                   | EXPLICIT USE OF "HCV"                                                                                                                                                                                                                                                                                           | SUPPORTING PRINCIPLES                                                                                                                                                                                                                                                                       |
| <b>Forest Stewardship Council® (FSC®)</b><br>           | <ul style="list-style-type: none"> <li>• <b>Principle 9</b> High Conservation Values</li> </ul>                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• <b>Principle 3</b> Indigenous Peoples' Rights</li> <li>• <b>Principle 4</b> Community Relations</li> <li>• <b>Principle 6</b> Environmental values and impacts</li> </ul>                                                                          |
| <b>Roundtable for Responsible Palm Oil (RSPO)</b><br> | <ul style="list-style-type: none"> <li>• <b>Principle 5</b> Environmental responsibility and conservation of natural resources and biodiversity</li> <li>• <b>Principle 7</b> Responsible development of new plantings (respecting local people's land and conserving primary forest and peat lands)</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Principle 1</b> Commitment to transparency</li> <li>• <b>Principle 2</b> Just land acquisition</li> <li>• <b>Principle 6</b> Responsible consideration of employees and of individuals and communities affected by growers and mills</li> </ul> |
| <b>Bonsucro (sugar)</b><br>                           | <ul style="list-style-type: none"> <li>• <b>Principle 4</b> Actively manage biodiversity and ecosystem services</li> <li>• <b>Principle 5</b> Continuously improve key areas of business</li> </ul>                                                                                                             | <ul style="list-style-type: none"> <li>• <b>Principle 1</b> Obey the law</li> <li>• <b>Principle 3</b> Manage input, production and processing efficiencies to enhance sustainability</li> </ul>                                                                                            |
| <b>Roundtable for Responsible Soy (RTRS)</b><br>      | <ul style="list-style-type: none"> <li>• <b>Principle 4</b> Environmental responsibility</li> </ul>                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• <b>Principle 3</b> Responsible community relations</li> <li>• <b>Principle 5</b> Good agricultural practices</li> </ul>                                                                                                                            |

**Table 1:** HCV in different commodity certification standards. This table provides examples of some of the most prominent certification standards that use HCV. In addition to principles which explicitly use HCV terms, the other principles in such standards usually complement and reinforce the importance of social and environmental values. The intent is to show that not all valuable sites are resources are necessarily HCVs, but they should still be responsibly managed or protected in compliance with the overall standard.



### Box 3: HCVs and smallholders

This guidance is mainly aimed at larger commodity producers who are striving to achieve and/or maintain certification status for a range of commodities (including timber, palm oil, soy, sugar). However, it should be acknowledged that companies often source timber and food products from smallholders, and smallholders can pursue certification in their own right, usually as part of a cooperative or group scheme. Smallholders do not have access to the same level of technical expertise and financial resources as large companies and therefore some of the guidance in this document will be beyond the reach of many small producers. Some guidance for smallholders is already available for certain sectors (e.g. forestry), and it is being actively developed for others (e.g. oil palm). This is an area which the HCV RN plans to consider more in the near future and to add a section to the website on HCV smallholder guidance.

### Investors and companies

In addition to the commodity standards mentioned above, financial institutions including commercial banks (e.g. HSBC) and development banks have developed policies that include environmental and social good practice<sup>11</sup>. Some institutions explicitly include HCVs in their policies, but even if they do not, they may use complementary principles. For example, one of the most widely adopted set of best practice principles comes from the International Finance Corporation (IFC). The IFC Performance Standards (PS) cover a range of environmental and social topics of importance to investors. The IFC PS are used, either explicitly or implicitly, by many national development banks and commercial banks. Though IFC Performance Standards do not explicitly reference HCVs, many of the PS are cross-cutting or have complementary intent as HCVs<sup>12</sup>.

For example:

- Performance Standard 5: Land acquisition and involuntary resettlement
- Performance Standard 6: Biodiversity conservation and sustainable management of living natural resources
- Performance Standard 8: Cultural heritage

Companies who receive funding from such financial institutions need to comply with environmental and social guidelines. In other words, the presence of HCVs would affect the development options and management needs for companies that produce, source or trade commodities. In addition to access to finance, companies are concerned about HCVs for reputational reasons. Increasingly, private sector companies are including HCV assessments in their due diligence activities and in their social and environmental management systems.

### 1.3.3 | Different countries: HCV National Interpretations

HCV national interpretations (HCVNIs) are documents that adapt the general definitions of the six HCV categories to a country context. HCVNIs are important for two reasons: Firstly because the generic values include terms like significant, critical and concentration, which need to be qualified according to the local context. Secondly because appropriate management of a HCV depends on the level of threat to the value, which can vary dramatically between countries. For example: the way HCV 2 is understood and applied for forests will be different in Canada (where the country retains large tracts of undisturbed forest) from the way it will be treated in Ghana (where there are only a few remaining forest blocks, none of which are undisturbed). Most national interpretations currently focus on forests.



<sup>11</sup> See <http://www.hcvnetwork.org/about-hcvf/hcv-in-natural-resource-certification#the-hcv-approach-in-2>

<sup>12</sup> See [http://www.ifc.org/wps/wcm/connect/735f0a0049800a4eaa13fa336b93d75f/Phase3\\_QCR-PS6.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/735f0a0049800a4eaa13fa336b93d75f/Phase3_QCR-PS6.pdf?MOD=AJPERES)



The process of elaborating a national interpretation is also a useful way to build consensus around how each of the six value categories is understood and applied. Ultimately this enables more consistency in the use of the concept within the country.

For guidance on national interpretation processes see

<http://www.hcvnetwork.org/resources/global-hcv-toolkits/hcvf-toolkit-part-2-final.pdf>

and for examples of different HCV national interpretations see

<http://www.hcvnetwork.org/resources/global-hcv-toolkits>

The quality of the HCVNI will depend on the amount of data already available (biodiversity, ecology, socio-cultural), the capacity of participants to define values and thresholds, and the amount of consultation and field testing that has been conducted to refine what HCVs mean in the local and national context.

#### Box 4: Countries that have HCV National Interpretations (including drafts)

- |                                  |                                    |                        |
|----------------------------------|------------------------------------|------------------------|
| • Bolivia                        | • Ecuador                          | • Malaysia             |
| • Bosnia-Herzegovina             | • Gabon                            | • Mozambique           |
| • Bulgaria                       | • Ghana                            | • Russia NW, FE Russia |
| • Canada                         | • Indonesia                        | • Romania              |
| • Cameroon (partially developed) | • Liberia                          | • Slovakia             |
| • Chile                          | • Papua New Guinea                 | • Vietnam              |
| • China (N.E.)                   | • Poland                           |                        |
| • Democratic Republic of Congo   | • Caucasus region (Turkey-Georgia) |                        |

Whenever a national interpretation is available for a country, it should be used by the assessor as guidance, recognising that the HCVNIs are not binding rules. In practice not all HCVNIs have been field tested, there is not an overall process for assessing the quality of NIs, some are already rather out of date and most should be considered living documents. It is therefore advisable to complement the HCVNI with current HCVRN-endorsed guidance and stakeholder consultation. There is no rule for how often HCVNIs should be updated, but good practice would be to review and update them following changes to HCV definitions, with the publication of updated guidance and after taking stock of lessons learned.

HCVNIs should adopt the definitions of Box 1 as the basis for interpretation. The HCVs should not be renumbered, and new HCVs should not be added. Other important values that are deemed essential by stakeholders should still fit within the spirit of the original six HCV categories. Where HCVNIs adopt subdivisions of the HCVs for clarity, these should not introduce novel concepts that do not directly relate to the global definitions. HCVNIs should include discussions on how to define and interpret each value in the given national context. However, some interpretation by the assessor will always be required.





**Section 2 goes beyond the HCV definitions to consider their intent and what assessors should consider when interpreting HCV information and deciding upon HCV designations. It provides good practice guidance on how to determine the amount of information and consultation needed. It is important to understand these concepts before conducting an HCV assessment, and it will also be useful for writing the HCV assessment report.**



# 2

## Best practice considerations for HCV Assessments

### REMEMBER

This is about Best Practice, especially in higher risk situations.

These recommendations are not compulsory, but should help the manager, assessor or auditor better understand the HCV definitions and how to apply the HCV approach according to the context and the scale and risk of various projects.

An HCV assessment is the process by which HCVs are evaluated and identified in practice and the purpose of the HCV assessment should be clear (e.g. usually it is part of a certification scheme or a planning exercise). HCV assessments can vary in their scope, duration, cost and reporting requirements. However, what is important is that **the presence or absence of all six categories of HCVs should always be assessed in a way that is consistent with global definitions and HCVRN interpretation**. If one or more HCVs are not addressed, there must be adequate justification for this (e.g. the HCV is absent beyond reasonable doubt). A good quality HCV assessment must consider the scale, intensity and risk of the proposed activity (see 2.1), respect the HCVRN charter (see 2.2), conduct quality stakeholder consultation (see 2.5), consider the wider landscape (see 2.3) and interpret findings using a precautionary approach (see 2.6.2).

### Who conducts the HCV assessment?

In some cases, the HCV assessment may be carried out by the company management team. In others cases, a standard may require that HCV assessments be carried out by an independent team (e.g. new plantings for RSPO certification). Managers may contract specialists to carry out certain tasks if internal capacity is lacking, if the credibility of the assessment would be enhanced by an independent team, or if the trust of local people requires third party involvement. HCV assessors need to be experienced in the ecosystems being assessed; this reduces some of the risks of rapid assessment. **Any external assessor should always work with or consult with local and regional experts wherever possible.**

The HCV report should detail the composition and qualifications of the assessment team and their relevant expertise on biological and social values.

### 2.1 Scale, intensity and risk

The larger the scale, intensity and risk of project activities, the more effort should be devoted to detecting, identifying and understanding the characteristics, distribution, sensitivity and vulnerability of HCVs. The assessor must adequately describe the potential impact and scale of proposed operations and ensure that assessment efforts are adequate.

#### Box 5: Defining scale, intensity and risk

**Scale:** A measure of the extent to which a management activity or event affects an environmental or social value or a management unit, in time or space. An activity with a small or low spatial scale affects only a small proportion of the area each year, an activity with a small or low temporal scale occurs only at long intervals.

**Intensity:** A measure of the force, severity or strength of a management activity or other occurrence affecting the nature of the activity's impacts

**Risk:** The probability of an unacceptable negative impact arising from any activity in the management unit combined with its seriousness in terms of consequences.

Definitions adapted from FSC V 5 (2012) glossary (see Figure 1)



## Assessing risk

A system for environmental risk assessment in FSC-certified tropical forests has already been developed and similar systems can be developed for temperate, boreal and plantation forests, and for socio-economic values. Meanwhile simple checklists can be used to indicate the approximate level of risk found in individual MUs. The results could be used by managers and certifiers to justify decisions to seek relatively more or less information on HCVs, and to take relatively more or fewer measures to mitigate the negative effects of management. If the risk is higher, more information should be gathered in order to have a high degree of confidence that HCVs are fully and accurately identified, and much greater care is needed to ensure that HCVs are given the protection and management they need for their maintenance. An HCV assessment should occur prior to proposed development activities or operations rather than retrospectively and should always be completed prior to any natural vegetation clearance.

### Box 6: Example checklist of potential vulnerabilities or risks in tropical forests include:

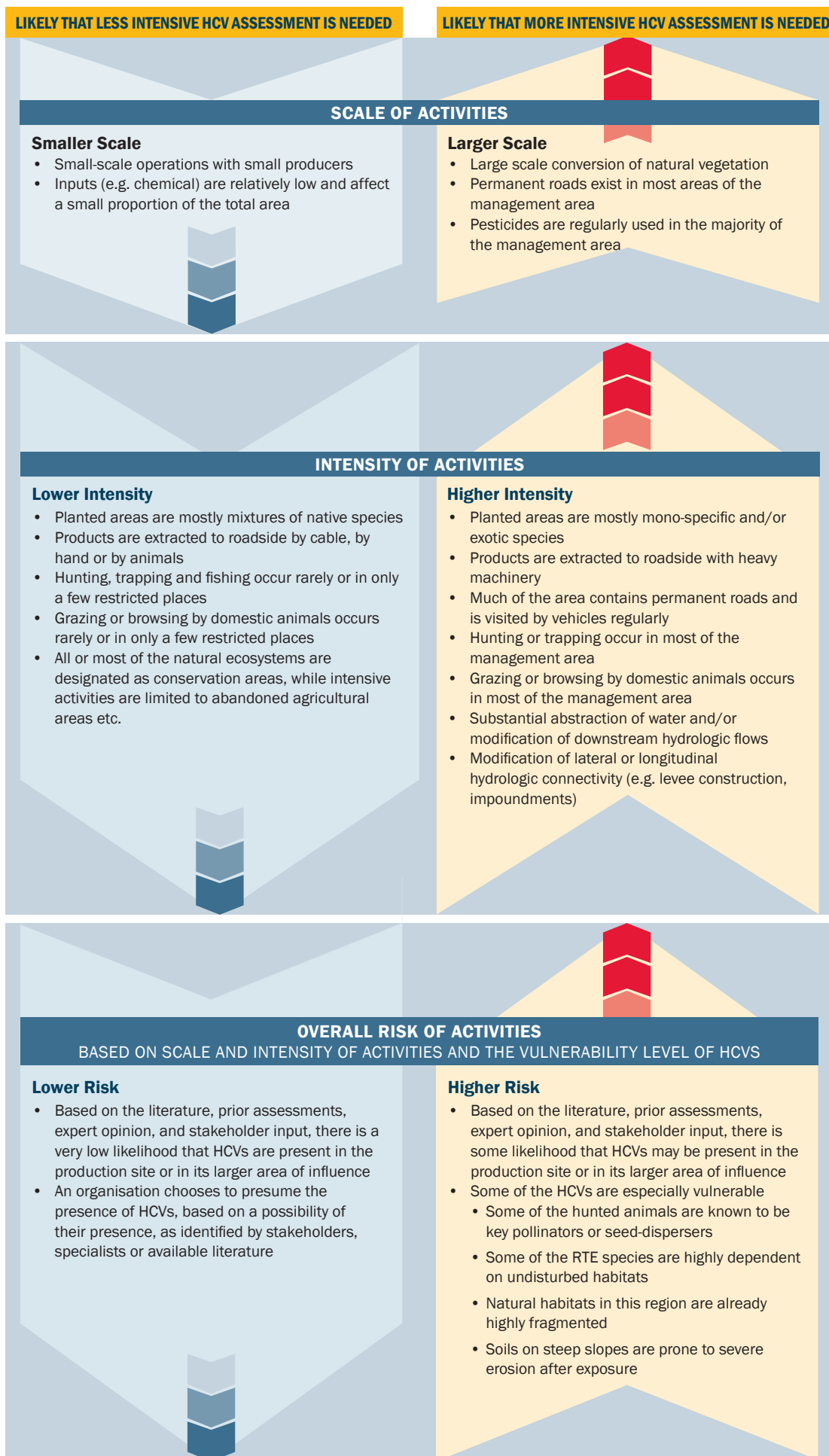
- Harvested trees have inadequate natural regeneration rates.
- NTFP species are being over-harvested.
- Hunted animals include “keystone” seed-dispersers of some harvested trees.
- The MU contains threatened species, dependent on primary and/or undisturbed forest.
- The MU contains animals requiring large territories for hunting or breeding.
- The MU contains animals which depend on abundant fruiting seasons, affected by changes caused by logging or silvicultural treatments.
- Some sites are crucial for the breeding, roosting etc. of threatened species.
- Designated conservation areas are threatened by fires, hunting etc.
- Forests in the region have already been fragmented.
- Water bodies are liable to obstruction or contamination from rubbish, chemicals.
- Soils in harvested or cleared areas readily become saturated or waterlogged.

For more complete lists for tropical forests, see Annexes 4, 5 and 6 of ERA,  
<https://sites.google.com/site/environmentalriskassessment>





**Figure 1:** When the scale of activities is large, when the intensity of activities is high, or when at least some of the HCVs are especially vulnerable, then the risks to HCVs are high. Based on this logic, more detailed HCV assessments and/or protective measures are needed to avoid unacceptable impacts. These examples are a small selection of the very many ways of scoring the scales and intensities of activities and impacts. Areas containing natural vegetation (native species) have a higher probability of containing HCVs 1-3. Areas occupied or regularly used by local people have a higher probability of containing HCVs 4-6.





### Box 7: Environmental & Social Impact Assessment (ESIA)

Best practice requires that environmental and social risks be identified before any developments. ESIA's are beyond the scope of this document, but it is important to note that one of the main differences is that HCV assessments consider the wider area of influence (see 2.3) of the project and rely on high quality stakeholder consultation (see 2.5).

National laws and regulations generally require an ESIA to be carried out for developments, while HCV assessments are generally carried out as part of voluntary standards processes. The two can potentially be coordinated in terms of data gathering. However, regulatory ESIA's may not cover the full range of HCVs, or provide the depth of information necessary to establish a credible HCV assessment. Results of ESIA studies can provide useful data for HCV assessments.

## 2.2 Responsibility to the HCVRN Charter

The HCV process should be integrated with responsible natural resource management that respects the intent of the HCV approach and certain principles of the HCVRN charter<sup>13</sup> such as:

### Legality

- There is compliance with all applicable national and local laws and international treaties and agreements. In some countries, many of the values identified in HCV assessments already receive protection through land use designations, planning processes or other government regulations.

### Secure tenure, customary rights and consent

- The right to use the land can be demonstrated, and is not legitimately contested by local communities with demonstrable rights.
- Use or management of the land does not diminish the legal or customary rights, of indigenous peoples, local communities or other users, without their free, prior and informed consent (FPIC) see Box 13.
- Good land management should include proper economic planning for the wellbeing of communities that depend on that land.

### Consideration of the impacts of conversion

Compared to management of natural ecosystems, conversion generally has a more severe and irreversible impact on biodiversity, ecological functions and social systems. Protective measures for HCVs must therefore reflect the severity of the impact. HCV, as an approach, does not rule out development or even conversion of natural vegetation (only the most critically important or significant values). Some, but not all, HCVs can be maintained even in conversion scenarios through good management and this will have to be decided on a case by case basis. The HCV approach requires that in situations where conversion is expected, managers must ensure that adequate effort has been made to identify HCVs and that the precautionary approach is used. If values are identified that require areas at the site and landscape scale to be maintained or enhanced, then those areas shall not be converted to other uses. **Note that the absence of HCVs alone should not be used to justify the conversion of natural ecosystems; there may be other environmental and social values worthy of protection.**

<sup>13</sup> <http://www.hcvnetwork.org/resource-network/the-network-charter-May-2010/charter#guiding-principles>

Some national governments may prioritise development over the responsible management of HCVs, however, in the context of certification schemes, managers are often expected to fulfil additional requirements beyond legal compliance. In other words, even if large scale conversion is acceptable or even encouraged by national governments, managers should still ensure that any HCVs in relevant management units are maintained and/or enhanced.

## 2.3 Location and landscape

The first step in preparing for an HCV assessment is to have an accurate location for the project. This means acquiring geographic coordinates or maps of the project area. This allows the assessor to place the project area within a wider landscape and to get a first impression of

1. whether it is feasible and appropriate to conduct an HCV assessment,
2. what the key **environmental and social values** might be **based on desk research and initial stakeholder consultation** and
3. to consider the **wider landscape** and any potential impacts to protected areas, local people's resource use, etc.

### Does the project location pose serious risk to HCVs?

Depending on the country, forestry and agriculture concessions may be allocated with varying degrees of coordinated land use planning and due diligence. What this means in practice is that some governments may allocate concessions which, depending on the production activity, could pose serious threats to biodiversity, habitats and local people. One of the responsibilities of the HCV assessor is to respect the HCVRN Charter as concerns legality, land tenure and conversion issues. At this first stage, if it is clearly indicated from maps, desk research and stakeholder consultation, that an area is inappropriate for development (e.g. a newly proposed project is located in or adjacent to a high biodiversity area, an area with high endemism, or if it would contribute to the fragmentation of a large contiguous natural ecosystem area, etc.) the HCV assessor should recommend against proceeding with the project. However, in most cases the HCV assessor will be able to proceed with desk-based research, consultation and field work to evaluate the presence and location of HCVs in the project area.

### Considering the wider landscape

**An HCV assessment should be conducted primarily at the production site scale** (e.g. management unit, forest concession, agricultural plantation). **However, ignoring the wider landscape context** (e.g. activities in neighbouring areas, land use plans in the region, the presence and status of protected areas, linked freshwater systems, etc.), **can increase the risk of habitat fragmentation and threats to or impairment of some HCVs**. Some HCVs are present at the landscape level itself (e.g. landscape level ecosystems, large watersheds), others depend for their continued existence on the presence of a mosaic of suitable habitat in the wider landscape (e.g. some critical water values, populations of rare, threatened or endemic species). The key social and biological features of the wider landscape should be clearly described. This should include information on:

- Protected areas (existing or in process of gazettelement)
- Regional or sub-regional biogeography (is the assessment area part of a distinct and/or narrowly restricted biogeographic region?)
- Location and status of areas of natural vegetation (including a description of ecosystem types, size, quality)





- Occurrence of known populations of species of global concern and migration corridors in the landscape
- Major landforms, watersheds and rivers, geology and soils
- Human settlements and infrastructure, agricultural areas
- Social context (ethnicity, major social trends and land use activities)
- History of land use and development trends, including future plans (e.g. spatial planning maps, development initiatives and existing/proposed commercial exploitation and production licenses)

### Box 8: Defining the area of influence

The **area of influence** of a project (e.g. forest management unit, agricultural plantation) may extend to off-site areas that could be affected by infrastructure developed to support production activities (e.g. roads), by altered disturbance regimes (e.g. fires), or by displacement of resource use by local communities to new areas. It may also include areas that could be affected by hydrologically-mediated impacts of production practices. It is recommended that managers seek to collaborate with neighbours and other initiatives in the landscape whenever possible, especially when such collaboration would improve HCV management.

## 2.4 HCV methods and data sources

### 2.4.1 | Evaluating the need for a scoping study

Depending on the potential impacts of operations and the resources available, a manager may first arrange for a scoping study prior to continuing with the full HCV assessment. A scoping study can help to identify the project's area of influence, available information and initial stakeholder concerns; enabling the assessor to identify information gaps, high priority issues and to inform the methodology for the field assessment and the team required. Scoping can involve a visit to the management unit to see key sites, have an idea of the general vegetation types, in order to better understand site logistics and to speak to local community representatives and experts. For projects planned in areas with insufficient information in the public domain, findings from a scoping study can be very useful in making decisions on whether the area can be converted without significant irreversible impacts on conservation values and hence whether the project should go ahead or not. In cases where the decision is to halt the project, based on the scoping findings, the land manager saves money and resources for not carrying out a full HCV assessment or impact assessment for this area.

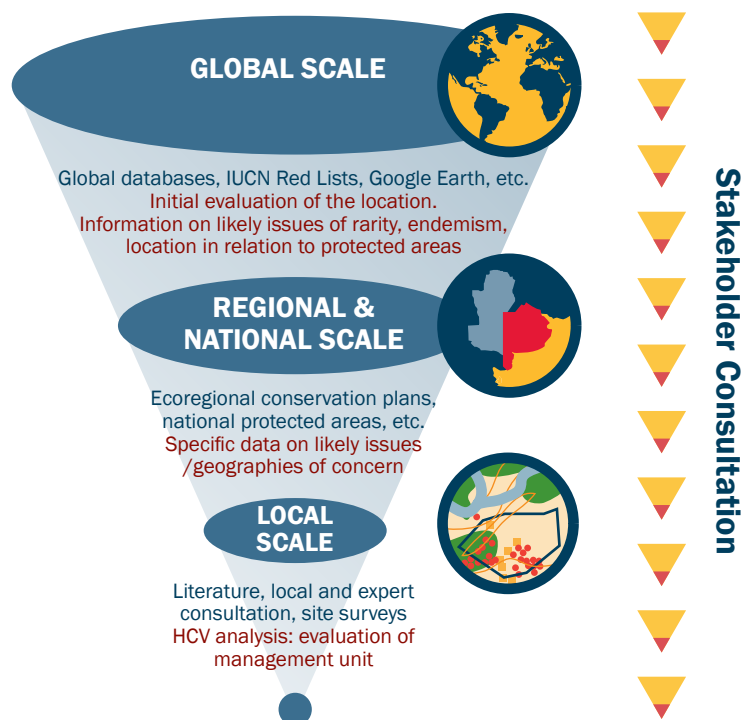
### 2.4.2 | Step-wise screening

HCV identification is best carried out through a stepwise, screening approach, using the best available information at the proper reference scale (global, regional or national as for HCVs 1-3) or more local-scale information (HCVs 4-6) working down towards a site-level assessment. The reference scale is conceptual, to identify issues of value like rarity and is not the recommended scale for mapping. This kind of higher level information can also inform HCV 4-6 identification, but less so. For example, there may be general information about important cultural sites (World Heritage Sites), national level demographic information, or maps of infrastructure and settlements.

**Reference scale information will never be enough to make decisions at the management unit, which requires site-scale assessment.**

However, all reference scale analyses need to be used critically and where possible several should be compared, with consideration of the precautionary approach (see 2.6.2). The different levels of information to consider during an assessment, from reference to site level, are illustrated below:

**Figure 2:** is a schematic drawing of how different level of information and data sources will be useful at different scales. For example, at the global or regional scale very high level, coarse filter information such as global lists and priority landscapes can be useful. As one moves down to the national level, looking at specific country-level values and data sets will be useful. Finally, since the HCV assessment will ultimately be conducted at the site scale (e.g. MU or plantation), information at the local scale will include field survey data and existing studies. It is important to remember that stakeholder consultation is valuable throughout the process and can include consultations with global experts, national NGOs and local people.



### Systematic conservation planning (SCP)

It is important to note that the HCV concept only addresses a sub-set of conservation concerns and that the HCV approach should not be used as a substitute for more elaborate and inclusive planning approaches and is ideally a contribution to a larger conservation plan.

**Large-scale planning can inform HCV assessments in three main ways.**

1. They can serve as a filter, informing how deeply to look at the site scale.
2. The data used as inputs to those analyses can also be used in an HCV assessment, assuming it is at an appropriate level of detail.
3. In some cases priorities identified through SCP analyses can be integrated into HCV assessments.

But, it is important to understand the criteria and methods used to identify those priorities and to recognize the differences between such methods and the HCV approach (e.g. SCP exercises often select sites based on efficiency and complementarity of the final solution, and so sites may be prioritized not because they contain absolute high values but because those values complement other selected sites). It is also important to know about the data gaps and not take outputs of planning exercises as a comprehensive set of priorities.



Data should be detailed, recent and complete enough to make informed decisions on presence/status/location of the HCVs. Data sources and data collection methodologies must be clearly described or referenced and summarised in the HCV report (and presented in annexes if appropriate), and should cover background and desk research and field data collection, if any (including dates and itineraries). Where HCVNIs exist, they should be used, in combination with the generic HCV Common Guidance guidelines. Any decisions to modify HCVNI definitions or thresholds, or to deviate from their recommendations, should be adequately explained and justified.

The lead assessor or manager needs to collect enough information to make a preliminary judgement on the likely HCVs to be found and the likely impact of operations – this will guide decisions on assessment team composition and data gaps to be addressed, and the scale of consultation required for the assessment<sup>14</sup>. The initial data gathering should aim to cover the following:

1. Location and size of the project area (e.g. management unit, concession, plantation).
2. Land use and land cover classification
3. Land tenure and ownership
4. Landscape context, including land and resource use – both small scale or industrial scale (e.g. settlements, forestry, agriculture, infrastructure) surrounding the project area
5. Presence and status of a regional land and resource use plan
6. Presence and condition of protected areas in the landscape.
7. Distribution and connectivity of ecosystems across the landscape and barriers affecting movement into and out of the assessment area
8. Soils and geology
9. Watershed maps and criticality of area for maintaining water supply and quality

**Reasonable efforts should be made to fill gaps in the data, proportionate to the impact and scale of the operations.** Where data are incomplete (spatially, temporally, taxonomically, etc.), expert consultation and field verification (i.e. physically visiting at least a sample of areas of very large sites and consultation) will be important. Given that it may be impractical or impossible to survey an entire site and its area of influence, field verification should focus on those areas most likely to contain HCVs. In cases of poor data, the precautionary principle can be usefully applied. For example, – based on e.g. home range information – if it is assumed that a certain species occurs in the unit, and management activities are designed so as to maintain its presence, there should be no need for field verification. If on the other hand, the manager insists that a certain value is absent although it seems likely that the value is present from desk studies, the assessor should try to verify this (which may mean indirectly investigating if a certain habitat is present and if locals have come across a certain species or directly investigating with species inventories).

<sup>14</sup> It is sometimes useful to conduct a scoping study, especially in new sites, to gather local information and ensure that preparations are adequate for a full assessment.



## 2.5 Stakeholder consultation

One of the important roles of the HCV assessor is to involve experts, local communities, and other stakeholders throughout the HCV assessment process.

Stakeholder consultation is valuable to:

1. Help the assessor evaluate whether a certain value is present.
2. Help the manager (or consultant) design a proper management regime for maintaining the value.
3. Inform local stakeholders that a value is present and that certain measures may be necessary to maintain that value, e.g. set-asides or no-hunting zones.

Many assessors hold formal stakeholder consultation meetings with a range of stakeholders; others prefer to meet separately with different stakeholders from different organisations or with different expertise and knowledge. The level of consultation can also depend on the type of land ownership. For example, if a private landowner has already identified an HCV and fully protects it, there may be little need for local community, governmental and NGO consultation, unless operations could have impacts on any of those groups. However, for projects on public lands, stakeholder consultations are necessary.

**Before consultation, the first step is to identify potential stakeholders, bearing in mind the nature and vulnerability of the anticipated HCVs, and the risks and threats they face.**

The amount of consultation needed will vary according to scale, intensity and risk of impacts of management activities, and likelihood of the occurrence of the HCVs.

### Box 9: List of potential stakeholders

Identify stakeholders, who will be directly affected by or bear the cost of a potential activity (e.g. forestry, agriculture, etc.)

Common examples include:

- **Local communities** who use ecosystem products or services
- **Organisations and institutions** that represent these communities (above)
- Those whose **legitimate commercial use** of the natural resources will be altered by development activities
- **Environmental and social organisations, academics and researchers** that represent the wider public and/or have an interest in the way the ecosystems are managed
- **Government bodies** will always need to be kept informed of discussions even if they are not directly affected



**Key stakeholders should be made aware that an HCV assessment is being conducted and that they have an opportunity to participate** and a means for raising any concerns. Stakeholder participation can take many forms, either in planning, being directly involved with an assessment team, participating in review meetings, participation on focused consultations or reviewing assessment results. Consultation allows the assimilation of different views and opinions, particularly with respect to agreement on what might constitute HCV in a site. **The effectiveness and success of the consultation process is determined by whether it identifies the great majority of opinions, relevant information and options. Objections to the consultation process may be raised if it can be shown that it failed to detect important bodies of readily available information or opinion.**

The HCV assessment report should contain evidence that relevant stakeholders were appropriately consulted and their views or the information they provided incorporated into the relevant process. It is also good practice to feedback on conclusions to the consultees as appropriate.

## 2.6 Interpretation of assessment findings

Decisions on HCV status (present, potentially present, absent) will come from a sound interpretation of assessment findings, which in turn requires an agreed interpretation of the official HCV definitions and the appropriate use of available sources of information.

### 2.6.1 Recognising significant values

**In practical terms, significant values are those recognized as being either unique, or outstanding relative to other examples in the same region, because of their size, number, frequency, quality, density or socio-economic importance, on the basis of existing priority frameworks, data or maps, or through field studies and consultations undertaken during the HCV assessment.** For purposes of determining significance, decisions should be based on widely accepted biogeographical or physiographic units between 10 and 100 million hectares, or on political, national or provincial units of similar size, such as WWF Ecoregions or similar land classifications based on broad and overarching patterns of vegetation and biological diversity.





Land and resource owners and managers may recognise and designate significance and HCV status on the basis of any one of the following processes:

- a) A designation, classification or recognized conservation status, assigned by an international agency, (e.g. IUCN Red List, UNESCO World Heritage Site, Key Biodiversity Area(KBA))
- b) A designation by national or regional authorities, or by reputable non-governmental organisations (NGOs), (e.g. countries signed up to the Convention on Biological Diversity (CBD) should all have biodiversity strategies which may include species action plans and nationally-recognised protected areas and national lists of protected species.
- c) Designations of specific values through field studies or expert consultation
- d) A voluntary designation (e.g. by a forestry or agriculture organization), on the basis of available information and consultations about known, suspected or reported values, even when not officially recognized by other agencies

**Note that for HCV 1, 2, and 3, the values need to be significant at a national or regional scale (or higher). HCV 4, 5, and 6 are significant to the communities that rely on them – so they are not relative to any scale but absolute in their irreplaceability to that community.**

### 2.6.2 | Using the precautionary approach

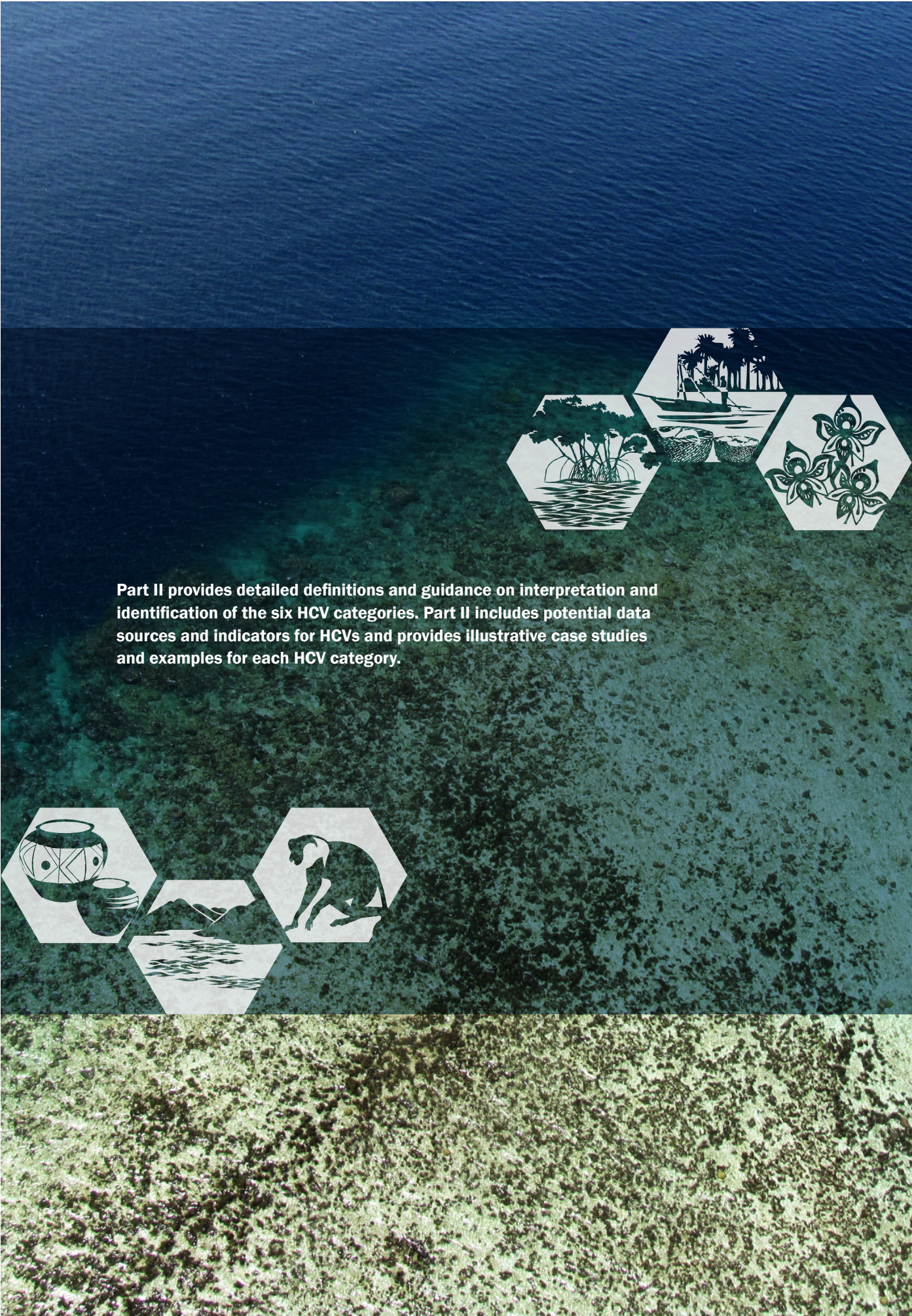
**The Precautionary Approach means that when there is a threat of severe or irreversible damage to the environment or a threat to human welfare, responsible parties need to take explicit and effective measures to prevent the damage and risks, even when the scientific information is incomplete or inconclusive, and when the vulnerability and sensitivity of values are uncertain<sup>15</sup>.** In the context of HCV identification, this means that when there are reasonable indications that an HCV is present, the assessor should assume that it is present.

What this means in practice depends on the situation and on the intended land/water use. In the context of land conversion for plantation agriculture the threats are likely to be more severe than for development scenarios which are limited to habitat disturbance/degradation. **Where the stakes are higher in terms of habitat loss or displacement of local peoples' resource use, the precautionary approach is even more important.** Assessors should take measures to resolve doubts, by obtaining more data or expert advice, until such time as there is clear evidence of the absence of a particular HCV and should **avoid giving HCV status to values that do not comply with the descriptions and examples in this guidance document**



<sup>15</sup> See Precautionary Approach, FSC P&C Glossary V 5.0





Part II provides detailed definitions and guidance on interpretation and identification of the six HCV categories. Part II includes potential data sources and indicators for HCVs and provides illustrative case studies and examples for each HCV category.







## Part Two

|                                                          |           |
|----------------------------------------------------------|-----------|
| <b>3 Identification of the six HCVs</b>                  | <b>25</b> |
| <b>3.1 HCV 1: Species diversity</b>                      | <b>25</b> |
| 3.1.1 Key terms and concepts                             | 25        |
| 3.1.2 Indicators and data sources                        | 27        |
| 3.1.3 Case study                                         | 29        |
| <b>3.2 HCV 2: Landscape-level ecosystems and mosaics</b> | <b>30</b> |
| 3.2.1 Key terms and concepts                             | 30        |
| 3.2.2 Indicators and data sources                        | 31        |
| 3.2.3 Case study                                         | 33        |
| <b>3.3 HCV 3: Ecosystems and habitats</b>                | <b>34</b> |
| 3.3.1 Key terms and concepts                             | 34        |
| 3.3.2 Indicators and data sources                        | 35        |
| 3.3.3 Case study                                         | 36        |
| <b>3.4 HCV 4 Ecosystem services</b>                      | <b>37</b> |
| 3.4.1 Key terms and concepts                             | 37        |
| 3.4.2 Indicators and data sources                        | 40        |
| 3.4.3 Case study                                         | 41        |
| <b>3.5 HCV 5 Community needs</b>                         | <b>42</b> |
| 3.5.1 Key terms and concepts                             | 42        |
| 3.5.2 Indicators and data sources                        | 44        |
| 3.5.3 Case study                                         | 47        |
| <b>3.6 HCV 6 Cultural values</b>                         | <b>48</b> |
| 3.6.1 Key terms and concepts                             | 48        |
| 3.6.2 Indicators and data sources                        | 49        |
| 3.6.3 Case study                                         | 51        |
| <b>4 Preparation of the HCV assessment report</b>        | <b>53</b> |



Section 3 covers the six HCV categories in detail. For each HCV, the definition is given, followed by an interpretation of key terms and concepts in the definition. Examples of values which would qualify as HCV are given for each of the six HCV categories. Recommendations are provided on useful data sources and indicators (i.e. what to look for and what might signal the presence of an HCV). Finally, brief excerpts from HCV assessments are used as case studies to illustrate how HCVs can be identified in different ecosystems.



# 3

## Identification of the six HCVs



### 3.1 HCV 1: Species Diversity

Words in **bold** in each HCV definition are treated in more detail in each section under key terms and concepts.

**Concentrations of biological diversity** including **endemic species**, and **rare, threatened or endangered (RTE) species** that are **significant** at global, regional or national levels.



#### 3.1.1 | Key terms and concepts

##### Concentrations of biological diversity

HCV 1 covers significant concentrations of biodiversity, recognized as unique or outstanding:

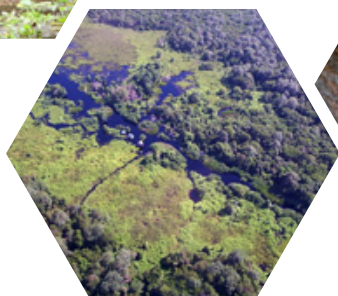
- in comparison with other areas (within the same country for example, or in big countries, smaller administrative areas like states or provinces, may be more appropriate reference units; or in comparison with biogeographical units of corresponding size).
- on the basis of priority frameworks or through field assessments and consultations.

Any area that contains **significant concentrations** of HCV 1 species (RTE or endemic), or which contains habitat critical to the survival of these species will be an HCV area. It does not mean that any sighting or recorded presence of a RTE species would qualify as HCV, only where the **concentration** of species is globally, **regionally or nationally significant**. Remember, these non-HCV values can still be protected under other environmental management principles.

It is not necessarily important to have a certain amount of biological diversity to qualify as an HCV 1; even a single species can be considered important enough to be an HCV 1 on its own; if the species is for example, listed in the IUCN Red List or on the National Protected Species list *and* is found in a population large enough to qualify as a concentration or significant in the country in question.

##### Protected areas: a proxy for concentrations of biodiversity

As part of an initial data gathering exercise the presence of a protected area (PA) recognised by IUCN and the Convention on Biological Diversity (CBD) can alert the assessor to potential HCVs because it may be assumed that the PA harbours significant concentrations of biodiversity values. Without further information as to the quality of flora and fauna present in the PA, under the precautionary approach, a PA (as defined by IUCN or national governments) would be considered an HCV 1. In addition to legal protected areas, global conservation priority sites such as Key Biodiversity Areas (including IBA, IPA, AZE sites, etc.) are also strong indicators of the potential presence of HCV 1.





## Spatial and temporal concentrations of species

Many species use a variety of habitats at different times of the year or at different stages in their life-history. These may include seasonal breeding sites, migration routes or corridors (latitudinal as well as altitudinal). In temperate and boreal regions, these critical concentrations will often occur seasonally (e.g. winter feeding grounds or summer breeding sites), whereas in the tropics, the time of greatest use may depend more on the ecology of the species concerned (e.g. riverine forests within tropical dry forests may be seasonally critical habitat for many vertebrate species and many migratory, temperate species may be critically dependent on tropical habitats for parts of the year). Seasonal and ecological refuges which provide temporary breeding, roosting, hibernation, migration sites or habitats essential for RTE species qualify for HCV 1, even when the habitat is only used in extreme years.

**Rare, threatened or endangered (RTE) species** refers to species that are at risk of, undergoing or have undergone severe population decline. Although the HCV definition mentions *threatened* and *endangered* species, these are often, together with vulnerable, subsumed under the overarching term *threatened and endangered* in an IUCN Red List context.

**Rare** is scale dependent and includes species that are

- Naturally rare, existing only at very low densities in undisturbed habitat, or
- Rare because of human activities e.g. habitat destruction, overhunting, climate change
- At the limit of their natural distribution (even if they are common elsewhere)

**Threatened and endangered species** can include species classified by IUCN<sup>16</sup> as Vulnerable (VU), Endangered (EN) and Critically Endangered (CR) at a global or regional level, or whose trade is regulated under international agreements (e.g. CITES), as well as nationally protected species. IUCN Red Listing remains incomplete and many RTE species have not yet been assessed by the IUCN Species Survival Commission. In some countries, especially those lacking national IUCN red lists or nationally protected species lists, expert consultation is needed to learn if any such species might be present

**Endemic species** are those which are only found within a restricted<sup>17</sup> geographical region, which may range from a unique site or a geographical feature (such as an island, a mountain range or river basin), to a political boundary such as a province or country. Endemic and range-restricted species are particularly vulnerable to threats as they have a limited distribution and may have smaller populations than widespread species. Endemism only generally triggers HCV status if the population is also nationally significant. The scale of endemism (e.g. national and regional) needs to be agreed.



<sup>16</sup> <http://www.iucnredlist.org/technical-documents/categories-and-criteria>

<sup>17</sup> According to IUCN, range restricted species, are species with an overall extent of occurrence of less than 20,000 km<sup>2</sup> or a known area of occupancy of less than 2,000 km<sup>2</sup>.

**The following would qualify as HCV 1:**

- A high overall species richness, diversity or uniqueness within a defined area when compared with other sites within the same biogeographic area.
- Populations of multiple endemic or RTE species.
- Important populations or a great abundance of individual endemic or RTE species, representing a substantial proportion of the regional, national or global population which are needed to maintain viable populations either:
  - Year-round (e.g. key habitat for a specific species) or ,
  - Seasonally, including migratory corridors, sites for breeding, roosting or hibernation, or refuges from disturbance.
- Small populations of individual endemic or RTE species, in cases where the national, regional or global survival of that species is critically dependent on the area in question (such species are likely to be restricted to a few remaining areas of habitat, and to be classified as EN or CR on the IUCN Red List). In these cases, there is often a consensus (among many stakeholders) that every surviving individual is globally significant (e.g. flagship species such as Panda, Indian Rhino, Mountain Gorilla).
- Sites with significant RTE species richness, or populations (including temporary concentrations) of priority species approaching those of key protected areas or other priority sites (e.g. KBAs) within the same biogeographic boundary.
- Particularly important genetic variants, subspecies or varieties. For example, the Cross River gorilla *Gorilla gorilla diehli*, (ca. 250 individuals remaining) is a genetically distinct subspecies of Western gorilla *Gorilla gorilla*, (ca. 95,000 individuals worldwide).

**3.1.2 | Indicators and data sources**

Identifying HCV 1 requires basic information on species and their habitats. That is: which species commonly occur in the area and which species are likely to occur based on their habitat requirements? Results of biodiversity assessments which show species ranges can be consulted to assess whether species' ranges overlap with the production site, and whether any of those species are RTE or endemic.

Indicators of a potential HCV 1 include:

- The presence of a recognized biodiversity priority area (e.g. IUCN recognised Protected Area, Ramsar Site, UNESCO World Heritage Site, Key Biodiversity Area, etc.)
- A designation by national authorities, or by reputable conservation organizations, recognizing concentrations of biodiversity
- The presence of natural habitat in good condition within such designations is a strong indicator (but not a guarantee) of the presence of HCV 1.

Proxies, such as habitat integrity, migrant species and specialised species, can be useful but must be treated with caution if these are used as potential indicators of other species. Flagship species and top predators may in some cases be relatively easy to survey, but they are also amongst the most adaptable species and may not indicate overall ecosystem health.



## Data sources

Key data sources include the Global IUCN Red List of threatened species or the National Red Data Book of threatened species. In addition to species lists, conservation priority schemes ([see \*http://www.biodiversitya-z.org/\*](http://www.biodiversitya-z.org/)) can be useful during initial desk-based studies to gain an idea of potential values in the area. The usefulness of particular prioritisation schemes depends on the scale and quality of the descriptive information and associated data resources. Some priority schemes are too large-scale to provide reliable indications at the local level, e.g. the whole of Central America is classified as a Biodiversity Hotspot. However, some categories such as Protected Areas, World Heritage Sites and the Key Biodiversity Area group of priority areas can provide species and habitats information for HCV 1 assessment, at a relevant scale e.g. for rarity and threat analysis. Landcover classifications and remote sensing are also valuable sources of information, especially when used either in the design of protected area networks (e.g. protected area gap analysis) or as decision-making tools for forestry and agricultural planning. In the best scenario, the ecosystem descriptions will be highly detailed and include species information.

The absence of an official classification may lower the probability that biodiversity HCVs are present at the site level, but it does not mean that HCVs are absent. For example, Important Bird Areas (IBAs) have been mapped for over 200 countries and territories, but few countries have gone through an equivalent process for plants, reptiles or fish.

Also, many areas either have not been evaluated or are so data poor that they cannot be evaluated. If there has not been a prioritization exercise in the region, the best way to proceed is to consult with experts who may be aware of relevant information or to use proxy data such as a biological survey from a similar habitat within the region (which is likely to have many of the same species and vegetation types).

## Consultation

It may be necessary to consult an expert to produce a list of what species one would expect to find. Following this, if the area contains habitat types that are known to support RTE or endemic species, it will be necessary to define where in the production area (i.e. concession or plantation) these species are likely to occur. If applicable, consultation with local people and workers about flora and fauna in the area can provide valuable information.

## Field work

Independent experts can make informed judgements but it may be necessary to carry out a survey of the area including aspects such as:

- Bird and mammal surveys for habitat-dependent, endemic or threatened species
- Survey of potential habitat (as a proxy) for RTE and endemic species

Survey effort should concentrate on the confirmed/potential presence of habitat-dependent, endemic or IUCN Red-Listed species. Field survey results should be represented on a map to show the actual or likely species distribution. This will enable the assessor to recommend the management areas that may be needed to maintain the HCVs.

Where it is difficult to determine the presence or population status of individual endemic or RTE species in practice, suitable habitat for RTE species can be used as a proxy and may be simpler to define and map. However, this might apply only in areas where there is no hunting/ poaching pressure on the fauna species. For example, a forest might appear to be suitable habitat for RTE species but it might be already “empty” due to unsustainable harvesting or poaching.



## HCV 1

### 3.1.3 | Case Study Species diversity



|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Site</b>               | East Kalimantan, Indonesia                 |
| <b>Ecosystem</b>          | Secondary riverine and lowland rain forest |
| <b>Assessment context</b> | HCV Assessment for RSPO certification      |

Tropical forests of the Sundaland biodiversity hotspot support high biodiversity and high rates of endemism. However, much of this biodiversity is threatened with extinction (e.g. >100 threatened species of endemic birds and mammals)<sup>1</sup>. The majority of the lowland forest in the region has been heavily logged, but this logged forest is still able to support some species found in pristine forest, including high densities of Bornean Orangutans (EN). An HCV assessment was carried out for a new oil palm plantation in eastern Kalimantan seeking RSPO certification<sup>3</sup>. The concession area of around 7,000 ha consisted predominantly of logged and fire-disturbed forest. Field studies revealed the presence of Bornean Ironwood (VU), Proboscis monkeys (EN), and False Gharials (EN) in the site's riverine forest. Bornean Orangutans (EN) were also deemed to be present at the site, based on the observation of nests. The presence of these three Endangered species, two of which are endemic to Borneo, qualifies as **HCV 1**. The HCV assessment recommended the protection of a 500 m riverine forest corridor, throughout the concession on both sides of the main river, to protect these species and to maintain connectivity with other orangutan habitat.



#### References:

- [http://www.conservation.org/where/priority\\_areas/hotspots/asia-pacific/Sundaland/Pages/default.aspx](http://www.conservation.org/where/priority_areas/hotspots/asia-pacific/Sundaland/Pages/default.aspx)
- <http://www.hcvnetwork.org/resources/assessments/PT%20KMS%20HCV%20Assessment%20Summary%20MECFINAL.pdf>



## 3.2 HCV 2: Landscape-level ecosystems and mosaics

**Large landscape-level ecosystems and ecosystem mosaics**, 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**.

### 3.2.1 | Key terms and concepts

HCV 2 includes ecosystems and ecosystem mosaics that are sufficiently large and relatively undisturbed enough to support viable populations of the great majority of the naturally occurring species and (implicitly) the great majority of other environmental values occurring in such ecosystems.

#### Large, landscape level ecosystems and ecosystem mosaics

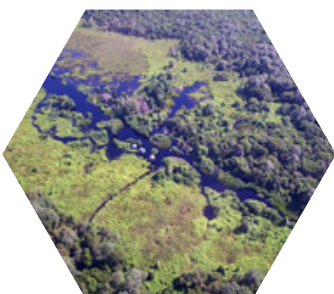
In principle, threshold size for HCV 2 should be related to the area needed to maintain viable populations, especially of large or wide-ranging species. An area threshold of 500 km<sup>2</sup> (50,000 ha) has been widely used as a guideline, but this should be determined by HCV National Interpretations or expert consultations. In South Africa for instance 5,000 -10,000 ha is used to define “large”. Smaller area thresholds may also be appropriate in regions that have experienced substantial ecosystem and habitat fragmentation and degradation.

#### Viable populations of the great majority of species

Most large landscapes, which have not been affected by clearance, heavy logging, intensification of grassland management, over-hunting, damming or straightening of waterways, the dominance of domesticated or invasive species or other major anthropogenic disturbances for several decades, probably contain viable populations of the great majority of the naturally occurring species. To qualify for HCV 2, it is not necessary that the area is totally undisturbed or pristine. Some species may be locally extirpated or missing, especially vulnerable or selectively hunted or harvested species. HCV 2 status can apply even when the few species lost happen to include large, keystone or iconic species, particularly if there is a reasonable chance of these being re-established in the future. HCV 2 often includes ecosystems that contain important sub-populations of wide-ranging species (e.g. wolverine, tiger and elephant) even though the sub-populations themselves may not be viable in the long term.

#### Box 10: The great majority of species understanding the intent of the definition

A literal and scientific interpretation of the HCV 2 definition recognizes that the *great majority of species* are organisms such as insects, plants and fungi, some of which would be viable within even fairly small areas. It must be recognized (sorry, beetles) that conservation efforts often have a bias towards larger, more charismatic species, particularly mammals and birds – in part because they are more studied. HCV 2 was designed to give some explicit protection to large and adequately-intact forests (valuable for their own sake since they are in a steady decline), and also for the sake of the species that require very large areas of natural forest to maintain themselves. The intent is that large landscapes need to be protected for their own intrinsic value and for viable populations of the species that depend on them.







### Natural patterns of distribution and abundance

This element of the definition is a recognition that relatively intact ecosystems, where ecological processes and functions (e.g. natural disturbance regimes, species distributions and abundance) are wholly or relatively unaffected by human activities have special importance. The key here is to maintain not only the extent of the ecosystem and the viable populations of species, but also their ranges and their patterns of abundance. It is not necessary to measure or estimate accurately the distribution and abundance of species or populations. However, a large ecosystem may not qualify for HCV 2 status if it has lost many of the species typical of such ecosystems in their natural state, or been so heavily disturbed that there is reason to believe that the spatial distribution of species and their relative abundance and regeneration has been seriously and permanently altered. HCV 2 does not include man-made, converted, heavily degraded or fragmented ecosystems, extensively modified, by human activity, especially land clearance and farming. HCV 2 is also ruled out in large ecosystems with features such as dominance or significant presence of invasive species, disrupted age/size class distributions of populations, and a loss of significant ecosystem processes (e.g. fruit masting, dispersal of key species).

### The following would qualify as HCV 2:

- Large areas (e.g. could be greater than 50,000 ha, but this is not a rule) that are relatively far from human settlement, roads or other access. Especially if they are among the largest such areas in a particular country or region.
- Smaller areas that provide key landscape functions such as connectivity and buffering (e.g. protected area buffer zone or a corridor linking protected areas or high quality habitat together). These smaller areas are only considered HCV 2 if they have a role in maintaining larger areas in the wider landscape.
- Large areas that are more natural and intact than most other such areas and which provide habitats of top predators or species with large range requirements.

## 3.2.2 | Indicators and data sources

### Indicators

#### Conservation Landscapes

In some cases, areas have already been recognized as high value landscapes (e.g. Ramsar sites, Central African Regional Program for the Environment (CARPE) landscapes, Intact Forest Landscapes, Valuable Grassland Areas and Priority Tiger Conservation Landscapes). These designations prioritise different benefits provided by large and relatively undisturbed ecosystems such as species protection, nutrient and water cycling or cultural values. Existing landscape-level designations are a good starting point, during an initial desk-based review, to investigate whether or not HCV 2 might be present.

However, the absence of a pre-existing landscape designation does not rule out the presence of an HCV 2 area. As mentioned above, areas with low levels of overall disturbance and high connectivity have a high chance of being HCV 2. Verification of HCV 2 status does not necessarily require detailed biological surveys. The likely presence of the great majority of species may be estimated from a range of proxies including habitat structure, condition, composition, connectivity, and intensity of human pressures (e.g. shifting agriculture and hunting).



## Intact forest landscapes

An important source of information on large, undisturbed landscape-level forests comes from the World Resources Institute (WRI), which has mapped Frontier Forests and Intact Forest Landscapes<sup>18</sup> (IFL) at a global and regional level since the 1990's. WRI defines an IFL<sup>19</sup> as “a territory within today's global extent of forest cover which contains forest and non-forest ecosystems minimally influenced by human economic activity, with an area of at least 500 km<sup>2</sup> (50,000 ha) and a minimal width of 10 km (measured as the diameter of a circle that is entirely inscribed within the boundaries of the territory).

All forests formally designated as IFLs, and other forests which reasonably match the above descriptions, should be considered as a potential HCV 2, unless there is clear and compelling evidence to the contrary. The final decision on whether an IFL is HCV 2 in any given country will depend on the quality of the forest (e.g. forest structure and species composition) and the outcomes of stakeholder consultations. However, **HCV 2** is not solely restricted to areas that show no signs of significant human activity, and “intactness” per se is not explicitly included in the HCV 2 definition, which rests on the global, regional or national significance of large, landscape level ecosystems, and specifically the presence of viable populations of the great majority of the naturally occurring species.

## Data sources

- Geographic Information Systems (GIS) and land cover analysis (e.g. data sets on forest blocks and intact watersheds and catchments), remote sensing, satellite imagery
- Maps of areas that have high landscape importance either as corridors or buffer zones
- Field measurements (e.g. tree size, density, age classes, canopy pattern, vegetation cover in arid lands, signs of erosion, water quality, etc.) to understand ecological patterns.
- Measures of human presence: interviews with local communities, signs of trapping, hunting, clearance etc.
- Consultation with conservation experts on specific priority landscapes<sup>20</sup>.

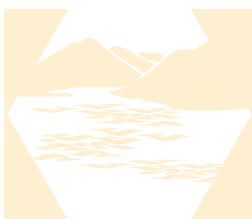


<sup>18</sup> <http://www.intactforests.org/concept.html>

<sup>19</sup> [www.intactforests.org](http://www.intactforests.org)

<sup>20</sup> See for example the landscape species approach: <http://wclivinglandscapes.com/WhatWeDo/LandscapeSpeciesAnalysis/tabid/3737/Default.aspx>





## HCV 2

### 3.2.3 | Case Study

#### Large, landscape-level ecosystems and mosaics



|                           |                                      |
|---------------------------|--------------------------------------|
| <b>Site</b>               | Mistik FMA, Saskatchewan, Canada     |
| <b>Ecosystem</b>          | Boreal forest                        |
| <b>Assessment context</b> | HCV Assessment for FSC Certification |

The Mistik Forest Management Area (MFMA) covers 1.8 million hectares in Saskatchewan, Canada<sup>1</sup>. This area is part of Canada's extensive boreal forest belt and as Saskatchewan has a relatively short history of large-scale timber harvesting, much of the management area can be classified as intact, landscape-level forest. Furthermore, Canadian forestry practices traditionally use a "coarse filter" strategy which aims to preserve the range, age, and distribution of forest types found naturally in the landscape. These natural forest landscapes are maintained by major, natural fire disturbance events, and so sustainable logging practices aim to mimic natural levels of disturbance. With reference to the Canadian national interpretation of HCV, logging practices include the protection of "core forest areas", which are broadly similar to large, landscape level forest areas and are deemed **HCV 2**. These core forest areas are defined as areas that are at least 20 years post-harvest, at least 500 m from a permanent cultural feature, and at least 500 m from areas that have been harvested within the last 20 years. About 50% of the Mistik FMA is defined as "core" forest<sup>1</sup> that supports viable populations of the majority of species in their natural distribution and abundance patterns.



#### References:

- 1 Clark, T. and Burkhardt, R. 2009. High Conservation Value Forest in the Mistik FMA Area, Version 1.4.  
<http://www.hcvnetwork.org/resources/assessments/Mistik%20HCVF%20vers%201.4%202008Ju7%20PDF-1.pdf>





### 3.3 HCV 3: Ecosystems and habitats

**Rare, threatened, or endangered ecosystems, habitats or refugia.**

#### 3.3.1 | Key terms and concepts

HCV 3 includes ecosystems, habitats or refugia of special importance because of their rarity or the level of threat that they face or their rare or unique species composition or other characteristics. To define rare ecosystems, one must consider the presence of similar ecosystems in the same biogeographic region and/or country. The size, age, structure and species composition of an ecosystem may also be important criteria. For example, an ecosystem that is common in one area or country may be scarce and fragmented (rare and threatened) in another country.

**Ecosystems** are a “dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”<sup>21</sup>. A practical approach is to use vegetation classifications which are easily recognizable in the field as well as satellite images, aerial photographs and other remote sensing imagery.

**Habitat** is the place or type of site where a population or organism occurs<sup>22</sup> (and is therefore essential for species level management). Habitats may be synonymous with ecosystems as defined above, or be defined at a smaller scale – e.g. some rocky outcrops are key habitat for rare or localised plants within a forest ecosystem, and seasonal wetlands are crucial for some insect species within grasslands. Habitats defined at the site scale are usually too small to be significant at a national level or above. HCV 3 focuses on higher-level ecosystem priorities which make the ecosystem rare and specific habitats for key species should be considered under HCV 1.

**Refugia:** There are two types of refugia (or refuges) which may have a HCV (in addition to seasonal refuges considered under HCV 1):

- Ecological refugia: Isolated areas which are sheltered from current changes (e.g. human threats or climatic events), and where plants and animals typical of a region may survive; and
- Evolutionary refugia: areas where certain types or suites of organisms persisted during a period when climatic events (e.g. glaciations) greatly reduced habitable areas elsewhere. Such refugia often support high overall species richness and significant numbers of endemic species.

For purposes of determining rarity and significance, decisions should be based on widely accepted biogeographical or physiographic units between 10 and 100 million hectares, or on political, national or provincial units of similar size, such as WWF Ecoregions or similar land classifications based on broad and overarching patterns of vegetation and biological diversity. To define rare ecosystems, one must consider the presence of similar ecosystems in the same biogeographic region and/or country. For example, in Indonesia an ecosystem that has lost 50% or more of its original extent in a bio physiographical region is considered HCV 3.



<sup>21</sup> FSC Principles and Criteria V 5.0

<sup>22</sup> Idem.



### The following would qualify as HCV 3:

Ecosystems that are:

- Naturally rare because they depend on highly localised soil types, locations, hydrology or other climatic or physical features, such as some types of limestone karst forests, inselbergs, montagne forest, or riverine forests in arid zones.
- Anthropogenically rare, because the extent of the ecosystem has been greatly reduced by human activities compared to their historic extent, such as natural seasonally-flooded grasslands on rich soils, or fragments of primary forests in regions where almost all primary forests have been eliminated.
- Threatened or endangered (e.g. rapidly declining) due to current or proposed operations.
- Classified as threatened in national or international systems (such as the IUCN Red List of Ecosystems<sup>23</sup>).

### 3.3.2 | Indicators and data sources

#### Indicators

Managers can choose to voluntarily presume the presence of HCV 3 if certain indicators are present, for example:

- In regions where many natural ecosystems or habitats have been eliminated, and others have been heavily impacted by development, remaining natural ecosystems of reasonable quality are likely to be HCV 3.
- Where ecosystem proxies indicate the presence of RTE ecosystems, even if these are inaccessible or have not been confirmed on the ground.

Where little is known about the species composition of ecosystems, biophysical factors, e.g. soil type and climate, can be combined to give suitable proxies for vegetation units. Next an assessment must be made of whether the ecosystems present are rare, threatened or endangered in the wider context.

#### Data sources

Where available, national classification systems of ecosystems and habitats and their rarity or threat status should be consulted. A gap analysis may be appropriate for determining which ecosystems in the MU are scarce in the region or in national protected areas, and which therefore merit HCV 3 status.

IUCN is coordinating the development of an Ecosystem Red List. This list will reflect extinction risks at local, regional and global levels, using the threat categories which are already used for species: Vulnerable, Endangered and Critically Endangered. Once operational, this will be an important resource for countries where little or no information exists on national ecosystem prioritisation ([see http://www.iucnredlistofecosystems.org/](http://www.iucnredlistofecosystems.org/)).

23 [www.iucnredlistofecosystems.org/](http://www.iucnredlistofecosystems.org/)



## HCV 3 3.3.3 | Case Study Ecosystems and habitats



The La Plata basin supports the main grassland area in South America and includes the Pampas ecoregions in Argentina<sup>1</sup>. The area supports a unique community of species with over 550 grass species and approximately 500 bird species, and some plants have high adaptability to arid conditions. Endemism in these grasslands is low, but biodiversity is high<sup>2</sup>. Across the La Plata basin grasslands historically covered a vast area of 750,000 km<sup>2</sup>, but pampas grasslands of Argentina have become anthropogenically rare due to the increase in livestock grazing and soy croplands. Only around 30% of the Argentinian Pampas remain in natural or semi-natural condition, and just 1% of the Pampas is formally protected<sup>2</sup>. WWF considers the status of the humid and semi-arid pampas ecoregions to be Critical/Endangered<sup>3</sup>. The speed of agricultural expansion across the Pampas over the last 40 years, means that these previously widespread ecoregions have now been greatly reduced in size. Therefore, they could qualify as a nationally or regionally threatened ecosystems under the **HCV 3** criterion.

|                           |                                       |
|---------------------------|---------------------------------------|
| <b>Site</b>               | Argentina                             |
| <b>Ecosystem</b>          | Humid and semi-arid Pampas ecoregions |
| <b>Assessment context</b> | Conservation priority setting         |



### References:

- 1 Michelson, A. 2008. TEMPERATE GRASSLANDS OF SOUTH AMERICA. Prepared for The World Temperate Grasslands Conservation Initiative Workshop Hohhot, China - June 8 & 29, 2008. [http://cmsdata.iucn.org/downloads/pastizales\\_templados\\_de\\_sudamerica.pdf](http://cmsdata.iucn.org/downloads/pastizales_templados_de_sudamerica.pdf)
- 2 Bilenca, D. and Miñarro F. 2004. Conservation strategy for the natural grasslands of Argentina, Uruguay and southern Brazil Phase II. Identification of Valuable Grasslands Areas (VGAs). <http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/Valuable%20Grassland%20Areas%20Argentina.pdf>
- 3 <http://worldwildlife.org/ecoregions/nt0806>, <http://worldwildlife.org/ecoregions/nt0803>





### 3.4 HCV 4: Ecosystem services

**Basic ecosystem services** in **critical situations** including **protection of water catchments** and **control of erosion of vulnerable soils and slopes**.

#### 3.4.1 | Key terms and concepts

##### Basic ecosystem services

Ecosystem services are the benefits people obtain from ecosystems, including provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; cultural services such as recreational, spiritual, religious and other nonmaterial benefits; and supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other nonmaterial benefits<sup>24</sup>. Such basic services become HCV 4 in critical situations (see below).

##### Critical situations

An ecosystem service is critical where a disruption of that service poses a threat of severe, catastrophic or cumulative negative impacts on the welfare, health or survival of local communities, on the functioning of important infrastructure (roads, dams, reservoirs, hydroelectric schemes, irrigation systems, buildings, etc.), or on other HCVs.

The concept of **critical situations** relates to:

- Cases where loss of or major damage to an ecosystem service would cause serious prejudice or suffering to recipients of the service either immediately or periodically (e.g. regulation of water provision during critical drought periods), or
- Cases where there are no viable, readily available or affordable alternatives (e.g. pumps and wells) that can be relied on if the service fails.

It may be useful to think about HCV 4 as supporting and regulating services (see Table 2) in critical situations. Provisioning and cultural ecosystem services overlap more directly with HCV 5 and 6 which are treated in more detail in later sections.

**Table 2:** Types of ecosystem services - adapted from the Millennium Ecosystem Assessment (2005). Supporting and regulating services contribute to HCV 4, Provisioning to human well-being and livelihoods (HCV 5) and Cultural ecosystems services contribute to cultural identity (HCV 6). Note that there are significant overlaps between some services e.g. water flow regulation and purification (HCV 4) and drinking water provision (HCV 5).

| TABLE 2: TYPES OF ECOSYSTEMS SERVICES |                           |                                |
|---------------------------------------|---------------------------|--------------------------------|
| HCV (in Critical Situations)          | ECOSYSTEMS SERVICES       | EXAMPLES OF ECOSYSTEM SERVICES |
| HCV 4                                 | SUPPORTING AND REGULATING | Flood regulation               |
|                                       |                           | Water purification             |
|                                       |                           | Climate regulation             |
|                                       |                           | Disease regulation             |
|                                       |                           | Genetic resources              |
|                                       |                           | Soil formation                 |
|                                       |                           | Nutrient cycling               |
|                                       |                           | Primary production             |
| HCV 5                                 | PROVISIONING              | Food                           |
|                                       |                           | Fresh water                    |
|                                       |                           | Wood and fibre                 |
|                                       |                           | Fuel                           |
| HCV 6                                 | CULTURAL                  | Aesthetic                      |
|                                       |                           | Spiritual                      |
|                                       |                           | Educational                    |
|                                       |                           | Recreational                   |

<sup>24</sup> Definition adapted from the Millennium Ecosystem Assessment



In practice, many HCVNIs have used three main headings under HCV 4: areas critical to water catchments, areas critical to erosion control, and areas providing barriers to destructive fire. Critical water catchments and protection against soil erosion are the most widely recognized forms of HCV 4, but others exist and are locally important. Some HCVNIs have added other critical ecosystem services, such as pollination services in Indonesia and protection against destructive wind in Ghana.

An area may be considered HCV 4 if it is protecting or providing one of these services in a critical situation. For example a forest may provide a function in regulating the flow of water within a catchment. This service may be considered critical when people are dependent on the water for drinking or irrigation, or where the regulation of water flow guarantees the existence of fishing grounds or agricultural land on which the local people are dependent. Similarly, a forest area may provide a vital function in stabilising slopes above a settlement, or, in the upper reaches of an important stream catchment. This service may be critical when disturbing operations would lead to drastic soil erosion with impacts on people's property or livelihoods. Maintaining intact grassland may be considered essential where loss of soil cover in arid conditions is likely to lead to serious erosion and desertification. Some freshwater systems are critical for helping to purify water. Critical protection against destructive fire is likely to occur in fire-prone areas, which contain or are adjacent to human settlements, important cultural sites, protected areas or other HCVs, and where the natural ecosystem is a barrier to fire. In these examples, what defines the value is the existence of people who are making use of, or depend on, an environmental service.

**Protection of water catchments:** HCV 4 may apply to river and stream regulation in natural catchments where these water supplies are critical for human uses including drinking water, cooking, washing and irrigation and, fishing, and there are no viable or readily available alternatives. These services can be disrupted by poor practices even in well-located production sites, e.g. if a management unit produces point or nonpoint source pollution or dams a stream. Virtually all activities on the terrestrial landscape will affect downstream freshwaters – it is just a matter of how much and how far.

**Control of erosion of vulnerable soils and slopes:** HCV 4 occurs in areas that contain natural vegetation types (e.g. forest or native grasslands) in good condition that help to prevent erosion, landslip, gulleying, dust storms and desertification, where such events would have a critical impact on people or the environment. Such impacts might be catastrophic (landslides) or pernicious and difficult to reverse (gradual loss of soil fertility and land productivity). Surface erosion causes the loss of top-soil, which leads to decreasing land productivity; in drylands it can also causes dust storms, dune formation and desertification. Landslides and ravines reduce the area of productive lands, damage infrastructure, endanger human lives, change a watershed's hydrology characteristics, and increase sediment loads, which causes siltation of water bodies and irrigation channels. This is particularly important for farming and fishing communities, and for freshwater or coastal biodiversity.



### Box 11: Why isn't Carbon Storage considered to be an HCV 4 service?

Carbon does not fit particularly well with the way HCV 4 is currently defined and interpreted: while carbon storage may qualify as a basic service of nature, it does not have the same close linkage to local communities implied in the examples given in this guide, nor does it fit with the interpretation of "critical situations", since any type of vegetation cover will contain carbon. Many international standard setting organisations (CCBA, RSPO, RTRS, RSB and Bonsucro) have either discussed or established specific criteria related to greenhouse gas emissions in land use management, and some organisations have begun to define High Carbon Stock as a separate (non-HCV) issue.

Several FSC members have suggested that High Carbon Forests and Intact Forest Landscapes should be classified as HCVs, especially to avoid release of their stored carbon, but there is to date, no consensus for how these concepts can best be incorporated into the Principles and Criteria.

For more on this topic, see

[http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/HCV\\_and\\_carbon\\_executive\\_summary.pdf](http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/HCV_and_carbon_executive_summary.pdf)

### The following would qualify as HCV 4:

#### Ecosystem services, in critical situations, related to:

- Managing extreme flow events, including vegetated riparian buffer zones or intact floodplains
- Maintaining downstream flow regimes
- Maintaining water quality characteristics
- Fire prevention and protection
- Protection of vulnerable soils, aquifers and fisheries
- Provision of clean water, for example where local communities depend on natural rivers and springs for drinking water, or where natural ecosystems play an important role in stabilising steep slopes. These two values frequently occur together and the area which provides the critical services (water provision and erosion control) may overlap partially or completely.
- Protection against winds, and the regulation of humidity, rainfall and other climatic elements.
- Pollination services, for example exclusive pollination of subsistence crops provided by native bees for smallholders in the Kenyan highlands, or of commercial Durian crops by bats in SE Asia. In both cases, the pollinators are dependent on the presence of suitable forest habitat and do not survive in purely agricultural landscapes.

#### Including areas such as:

- Forests, wetlands and other ecosystems which provide a protective barrier against destructive fires that could threaten communities, infrastructure or other HCVs.
- Groundwater recharge zones
- Grasslands providing buffering against flooding or desertification



### 3.4.2 | Indicators and data sources

#### Indicators

The following situations may indicate the presence of a likely HCV 4:

- Remote and/or poor rural areas where people rely directly on natural resources to supply most of their needs, including water
- Upstream of extensive or important wetlands, fish nurseries and spawning grounds, or sensitive coastal ecosystems (e.g. mangrove forests, coral reefs etc.)
- Upstream of important municipal water sources
- Steep or mountainous areas, or areas of high rainfall, where the risk of catastrophic erosion is high
- Where there is naturally low soil fertility, especially on sandy, peaty or fragile soils, where land clearance, drainage, use of heavy machinery or other intensive land use might affect soil structure and fertility.
- Arid or dryland areas particularly susceptible to erosion and desertification.

#### Data sources

- Information from water companies (e.g. location of dams, infrastructure, abstraction rates)
- Soil and vegetation maps to identify areas at risk of desertification
- Information on vector-borne diseases which have increased due to loss of forest habitat
- Information on connectivity issues with respect to pollination
- Hydrological and topographic maps
- Soil maps with erosion risk indicators
- Maps of human habitations and infrastructure (such as major transport routes, reservoirs, hydroelectric dams etc.)
- National systems for identifying critical watersheds (often part of national forest regulations)
- National laws regulating water catchment areas and disturbance to steep slopes
- Natural Capital Project <http://www.naturalcapitalproject.org/about.html>

The identification of critical services and situations requires consultations with local stakeholders who may be directly affected, and with others who may have local or specialist information, including local authorities, geographers and hydrologists. The assessor or manager should consider whether relevant regulations and guidelines on slope protection and water course management are being observed and if there are any slope/catchment areas that are particularly significant to local people. It is then necessary to consider whether current regulations and restrictions for such areas effectively protect its conservation value. This is a difficult judgment that may mean management that goes beyond legal requirements. Expert opinion should be sought, and consultations held before a final decision on the presence of this value is made.



**HCV 4** 3.4.3 | Case Study  
**Ecosystems services**



Cork oak and Holm oak woodlands (or *montados* in Portuguese) are silvi-pastoral systems covering around one million hectares in Spain and Portugal. They produce sustainable, and in many cases FSC-certified, outputs of cork and also support high biodiversity. Although they are well known for the provisioning service of cork production, they are less known for their other ecosystem services. However, an HCV assessment by WWF showed that watershed protection and prevention of soil erosion<sup>1</sup> could be as valuable as cork production. Watershed protection provided by *montados* is especially important in the Mediterranean region, where water can be seasonally scarce. In the Tejo-Sado River Basin, the Low Tejo Basin supports several key aquifers, including the Margem Esquerda aquifer that supplies water for urban and industrial populations in the Santarém and Setúbal districts. The Margem Esquerda aquifer supports 36% of all cork oak forests, and these are located primarily on sites of medium to high aquifer recharge. Crucially, recharge of the Margem Esquerda aquifer is largely reliant on water infiltration and atmospheric precipitation that are thought to be facilitated by the tree cover and management of the *montados* ecosystem. The *montados* in the Low Tejo Basin qualify as **HCV 4** because they are crucial to aquifer recharge and water quality.

|                    |                                                         |
|--------------------|---------------------------------------------------------|
| Site               | Southern Portugal                                       |
| Ecosystem          | Cork and holm oak woodlands and water catchments        |
| Assessment context | Regional HCV assessment for conservation prioritisation |



References:  
1 Branco, O. et al. 2010. Hotspot areas for biodiversity and ecosystem services in montados. WWF Mediterranean - Portugal.  
[http://awsassets.panda.org/downloads/habeas\\_report2010.pdf](http://awsassets.panda.org/downloads/habeas_report2010.pdf)



### 3.5 HCV 5: Community needs

Sites and resources **fundamental for satisfying the basic necessities** of local communities or indigenous peoples (for example for livelihoods, health, nutrition, water), **identified through engagement with these communities or indigenous peoples.**

**HCV 5** refers to sites and resources that are fundamental for satisfying the basic necessities of local people. The role of the HCV assessment is to characterize the level of dependence on the resource and to provide management recommendations for how to mitigate negative impacts on local people's livelihoods.

#### 3.5.1 | Key terms and concepts

##### Fundamental for satisfying basic necessities

A site or resource is fundamental for satisfying basic necessities if the services it provides are irreplaceable (i.e. if alternatives are not readily accessible or affordable), and if its loss or damage would cause serious suffering or prejudice to affected stakeholders. Basic necessities in the context of HCV 5 may cover any or all of the provisioning services of the environment (see Table 2) including tangible materials that can be consumed, exchanged or used directly in manufacture, and which form the basis of daily life.

The degree of dependence on HCV 5 resources may alter rapidly due to changes in the area such as the creation or repair of a road, improved communication infrastructure or an influx of migrants. **It is important to ensure that HCV 5 resources are not abruptly restricted without a transition plan with suitable alternatives identified using participative methods, and ideally with a full Free, Prior Informed Consent (FPIC) process.** Even where FPIC is obtained, managers need a far-sighted approach to ensure that changes in population needs are foreseen.

Where insufficient areas are secured for basic needs, communities may feel obliged to make use of other lands and resources, thereby putting at risk other HCVs or investments. In such a case, the trade-offs between different HCVs need to be managed through stakeholder consultation and cost-benefit analysis (considering the various social, environmental and economic risks, costs and benefits). Where the community's use of resources is extractive, and particularly if the uses may affect biodiversity HCVs such as endangered species, assessors should gather data on historical/traditional history of the resources and its uses, the past and present status and likely future trends, to help assess the current and future sustainability of the activities.

##### Identified through engagement with...communities or indigenous peoples

Local communities and/or indigenous peoples should play a key role in proposing and identifying potential HCVs through a participative process. When evaluating sites and resources as HCV 5 it is necessary to consult widely and ensure that participatory mapping and social surveys include representatives from minority, vulnerable and marginalized groups. Local communities need to be involved in a consultative process and agree to decisions through a FPIC process. This means that any decision or consent derived should be made without coercion or intimidation, with all relevant information provided and prior to commencement of any damaging activities or operations. In addition to local consultation, experts, local authorities and NGOs can provide helpful information and context.





The importance of natural resources to local communities can be characterized by the intensity of use, length of use, quality of use and legitimacy of claims. The designation and maintenance of an HCV 5 site or resource is only one element of what should be a wider rights-based approach to responsible land management, including appropriate impact assessment, consultative processes and negotiation.



### Box 12: Consideration of agricultural and pasture land

As the HCV concept refocuses on values (see Annex 1), the question of farming should be re-evaluated. Most rural communities require land for agriculture or pasture; subsistence farming as practised by many of the poorest rural communities is a clear case of a basic necessity. Therefore, some propose including the provisioning services of agriculture (especially subsistence farming), and future production value of land banks within HCV 5. This HCV status would require essential farmland to be protected from conversion to plantations, for example, if such protection is essential to safeguard basic community needs. It is important to include the essential needs derived from farming in the scope of HCV assessments, as an incomplete picture of human activities is likely to undermine the validity of recommendations both to protect affected communities, and the ecosystems in the landscape. However, the HCV concept was not originally designed to address provisioning services that depend on, or derive from, the clearance of natural ecosystems, and inclusion of farmland and land banks as HCV 5 could result in unintended consequences, such as reducing the safeguards against the clearance of natural ecosystems and creating conflicts between the aims of the different HCVs (e.g. biodiversity vs. conversion value of natural forests). Until this question is resolved through further work, it is recommended that in every HCV assessment, specific attention should be given to the question of subsistence farming and how this impacts food security. Traditional agricultural systems that maintain associated biodiversity may qualify as HCV, but this should be determined on a case by case basis.

### The following would qualify as HCV 5:

#### ...if they were determined to be fundamental for satisfying basic needs

- Hunting and trapping grounds (for game, skin and furs)
- NTFPs such as nuts, berries, mushrooms medicinal plants, rattan
- Fuel for household cooking, lighting and heating
- Fish (as essential sources of proteins) and other freshwater species relied on by local communities
- Building materials (poles, thatching, timber)
- Fodder for livestock and seasonal grazing
- Water sources necessary for drinking water and sanitation
- Items which are bartered in exchange for other essential goods, or sold for cash which is then used to buy essentials including medicine or clothes, or to pay for school fees



## 3.5.2 | Indicators and data sources

### Indicators

HCV 5 is most likely to be more important in areas where whole communities or significant portions of them are heavily dependent on those ecosystems for their livelihoods, and where there is limited availability of alternatives. In general, if local people derive benefits from natural or traditionally managed ecosystems, HCV 5 may be present.

The following indicate a high likelihood of HCV 5 in the area:

- Access to health centres or hospitals is difficult,
- Most houses are built from, and household tools made from, locally available traditional/natural materials,
- There is little or no water and electricity infrastructure
- People have a low capacity to accumulate wealth (living “day to day”)
- Farming and livestock raising are done on a small or subsistence scale
- Indigenous hunter-gatherers are present
- There is presence of permanent or nomadic pastoralists
- Hunting and/or fishing is an important source of protein and income<sup>25</sup>
- A wild food resource constitutes a significant part of the diet, either throughout the year or only during critical seasons

### Hunting

In areas where some people rely exclusively on hunting or where most people hunt occasionally or seasonally to supplement their diets and incomes there is a likelihood of HCV 5 (i.e. essential provision of animal protein). However, hunting frequently conflicts with biodiversity conservation (unsustainable harvesting of target species, hunting endangered species), and/or may involve illegal practices such as killing protected species, using prohibited methods, and hunting in prohibited places or during prohibited seasons. In trying to determine if hunting is fundamental for basic needs, assessors have tried to consider whether the level of hunting is subsistence or commercial, but this is difficult to distinguish in practice and in any case may not relate to sustainability. The table below provides examples of how to recognize when hunting may provide a basic necessities for local people. Managers need to *maintain and/or enhance* the HCV (in this case the protein provisioning service), but must also discourage illegal and unsustainable harvesting of protected species. This may require regulating or controlling hunting rates. In practice, there should be negotiation (ideally through FPIC) over reduced access to resources and a transition to alternative sources of protein and income.



<sup>25</sup> This does not refer to commercial hunting but to small-scale hunting where people obtain cash for basic needs such as cooking oil, salt, medicine, school fees, etc.

**Table 3:** Examples of how to distinguish different kinds of hunting systems, this is especially relevant to hunting of wild animals in many parts of the tropics.

| TABLE 3: TYPES OF ECOSYSTEMS SERVICES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CUSTOMARY HUNTING (likelihood of HCV 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | COMMERCIAL/EXTRACTIVE HUNTING (HCV 5 usually absent)                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>Hunters have customary rights to particular territories.</li> <li>People consume a portion of their catch, trade a portion for basic products (e.g. flour, bananas, cooking oil) and may also sell some or most of their catch in order to buy basic products (cooking oil, salt, paraffin/kerosene) or pay for basic services (school fees, medicine).</li> <li>Meat is consumed, sold and traded locally.</li> <li>Indigenous people live in the forest in temporary hunting camps, rotating throughout a hunting territory over the course of the year.</li> <li>Domestic livestock are fairly rare, or they are rarely consumed. Instead used for emergency cash, dowries, etc...</li> </ul> | <ul style="list-style-type: none"> <li>Hunters may negotiate access to hunting territories and use local guides, but they do not have customary rights to a hunting area.</li> <li>Larger quantities of meat are transported greater distances for cash sale.</li> <li>There is a chain of hunting specific wildlife and its product traders: village collectors, big town collectors/traders (i.e. commercial network)</li> </ul> |

### Data sources

Valuable sources of information include:

- Socio-economic assessments carried out in the area
- Consultations with relevant organisations working on community development with the communities in question (or other similar communities in the area)
- Surveys of the relevant communities, to determine their interactions with the assessment area and the ecosystem products and services they use
- Studies on natural resource use and livelihoods by conservation and development NGOs, local or national agencies etc.
- Anthropological works on diet and subsistence activities

The tools or methods used will depend on several factors including the scale of potential risks and impacts and the assessment budget and timeline. Listed below are some tools which may be used or adapted depending on the assessment.

- Participatory mapping** can be used to map the forms of current and historical land use, the extent of rights and different areas of customary management and resource use
- Participatory surveys or land transects** can also be used to identify the key elements in landscapes basic to livelihoods
- Socioeconomic studies** on household income sources, diet, hunting practices, etc. provides background information on why a particular element in the landscape may be essential to human wellbeing.
- Seasonal calendars:** Helps to identify changes according to seasons and circumstances, such as seasonality of forage and habitat uses, and migration patterns of animals linked to their livelihood strategies throughout the year.
- Wealth definition and ranking exercises**
- Participatory rural appraisal (PRA):** Helps to gather qualitative data from the people who know most about their own livelihood systems (local people). PRA usually covers some tools mentioned above.



Assessors will need to collect or review information on natural resource use by communities (food, construction materials, firewood, medicines etc.), the level of dependence of communities on these resources and the areas used. **As with all HCV assessment methods, the cost of various methods should be appropriate to the size and risk of the operations.** Small land owners or low impact operations will likely need to invest less in social methods than an industrial scale oil palm plantation of tens of thousands of hectares, for example. It is strongly recommended, but not necessarily compulsory, that an independent organisation is used to carry out social surveys because independence from the owner or manager of the production site can be necessary to facilitate open discussion.

## Box 13: Free Prior and Informed Consent (FPIC)

The right to FPIC includes the right of indigenous peoples and local communities to give, withhold or withdraw consent to those activities that would affect their rights. Guidance on the use of FPIC has been prepared for FSC, RSPO and climate change activities (REDD+) and these guidance documents (see below) should be consulted for a comprehensive explanation of the process. For the case of HCV 5 & 6, FPIC can be used to identify values with local people and to consider the positive and negative impacts that a project could have. At this point, local people should be informed about how the proposed development project could impact their use of resources, and can decide whether or not they are interested in engaging with the company and negotiating changed access to these values. For example, in cases where significant portions of hunting territories could be cleared for agriculture, local communities would need to decide on whether alternatives (e.g. fish farming, livestock and employment with company) are acceptable forms of compensation. A full FPIC process can take anywhere from weeks to months depending on the number of communities involved and the scale of impact. Managers may need to make a provisional identification and assessment of HCVs 5 and 6, based on available information and pending the completion of full consultative processes or FPIC negotiations.

### FPIC References:

Free, Prior and Informed Consent and Oil Palm Plantations: a guide for companies. October 2008. RSPO and Forest Peoples Programme.

[http://www.rspo.org/files/resource\\_centre/FPIC%20and%20the%20RSPO%20a%20guide%20for%20companies%20Oct%2008%20\(2\).pdf](http://www.rspo.org/files/resource_centre/FPIC%20and%20the%20RSPO%20a%20guide%20for%20companies%20Oct%2008%20(2).pdf)

Free, Prior, Informed Consent and REDD+: Guidelines and resources. WWF Working paper October 2011.

<http://wwf.panda.org/?203189/Free-Prior-Informed-Consent-REDD-Guidelines-and-Resources>

FSC guidelines for the implementation of the right to free, prior and informed consent (FPIC). Version 1, 30 October 2012. <https://ic.fsc.org/guides-manuals.343.htm>



## HCV 5

### 3.5.3 | Case Study Community needs



Biofuel feedstock production for renewable energy is set to increase in coming years and this case study focuses on an HCV assessment for potential sugarcane production in Mozambique<sup>1</sup>. The assessment was conducted to try and define best practice for HCV assessment in this context. Cabo Delgado Province, Mozambique is a mosaic landscape of agricultural land, as well as some secondary and more pristine woodland and forest areas. There are a number of villages within the site boundaries, and social surveys revealed that all communities within 3-5 km of forest or woodland areas were heavily dependent on natural resources from these areas. The resources included building materials, meat, and firewood. For all communities, these were the only available sources of these products. In many cases, water was also being transported up to 3 km from wetland areas to villages without water pumps. The dependence of the communities on these forest and wetland resources classifies these forest and wetland areas as **HCV 5**.

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| <b>Site</b>               | Cabo Delgado Province, Mozambique                                          |
| <b>Ecosystem</b>          | Mosaic landscape of agricultural land, forest, woodland and wetland areas. |
| <b>Assessment context</b> | Field test of HCV assessment for large-scale sugarcane agriculture         |



#### Reference:

1. Proforest. 2009. An assessment of potential High Conservation Values within Cabo Delgado Province, Mozambique.  
<http://www.hcvnetwork.org/resources/assessments/Mozambique%20HCV%20Cabo%20Delgado%20report%20final%20v1.1.pdf>



### 3.6 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.

#### 3.6.1 | Key terms and concepts

The definition of HCV 6 is extremely broad and it is useful to divide it into two different categories: cultural values of **global or national significance**, and **values critical for local people** at the site scale.

##### Values of **global or national...significance**

Sites, resources, habitats or landscapes which are significant at the global or national level are likely to have widely recognised historical, religious or spiritual importance and in many cases will have an official designation by national government or an international agency like UNESCO – see Box 14 below. Occasionally, new sites or resources of extraordinary cultural significance may be discovered through exploration of sites for development (e.g. ancient burial sites or prehistoric cave art); these can qualify as HCV 6 based on expert and stakeholder opinion, without an official designation.



#### Box 14: UNESCO Cultural Landscapes

In 1992 the UNESCO World Heritage Convention became the first international legal instrument to recognise and protect cultural landscapes. UNESCO acknowledges that cultural landscapes represent the “combined works of nature and of man”. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

##### **UNESCO cultural landscapes fall into three main categories namely:**

- **Clearly-defined landscape created intentionally by man:** This embraces garden and parkland landscapes constructed for aesthetic reasons which are often associated with religious or other monumental buildings and ensembles.
- **Organically evolved landscape:** This results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment.
- **Associative cultural landscape.** The inclusion of such landscapes on the World Heritage List is justifiable by virtue of the powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence, which may be insignificant or even absent.



### Critical importance for the traditional cultures of local communities or indigenous peoples

HCV 6 represents areas of cultural significance that have traditional importance to local or indigenous people. These may be religious or sacred sites, burial grounds or sites at which traditional ceremonies take place. These are frequently well known by the local people, and some national laws require them to be identified and protected. The assessor should consider whether existing laws are sufficient to safeguard the sites/areas.

#### The following would qualify as HCV 6:

- Sites recognised as having high cultural value within national policy and legislation.
- Sites with official designation by national government and/or an international agency like UNESCO.
- Sites with recognised and important historical or cultural values, even if they remain unprotected by legislation.
- Religious or sacred sites, burial grounds or sites at which traditional ceremonies take place that have importance to local or indigenous people.
- Plant or animal resources with totemic values or used in traditional ceremonies.

### 3.6.2 | Indicators and data sources

#### Indicators

#### Data sources

##### Global and national

- UNESCO World Heritage sites
- Museums, heritage lists, national data sets, authorities and any organizations which specialize in particular geographic areas or cultures
- National directives concerning archaeological sites and resources
- Consultation with anthropologists, historians, archaeologists, museums and databases for identification of “sites of global or national significance”

#### Box 15: Economic values in HCV 6

Most critical economic issues fit within HCV 5 (i.e. extractive use of natural resources for subsistence purposes). However, HCV 6 includes situations where the economic and the spiritual or cultural value are strongly linked, e.g. where local communities' basic income is related to cultural sites or resources. This income may derive from payment in kind (e.g. offerings) or in cash for culturally important activities (e.g. religious ceremonies); from tourism to sites of cultural importance (where communities are critically dependent on such tourism); or from the collection and sale of culturally important natural products (e.g. magic or religious herbs, roots etc.), where such products are of critical importance for the *traditional culture* of affected communities.

However, HCV 6 does not include the commercial-scale extraction and sale of natural resources with cultural resonance, where the link to the traditional *cultural identity* of the communities has been broken (e.g. many 'traditional' but mass-produced ceremonial objects carved from bone and horn). Care must also be taken to ensure that designation of HCV 6 does not create conflicts with national or international law (e.g. harvesting protected species for magic or religious purposes).





## Local

HCV 6 should be identified through engagement with local communities or indigenous peoples. Many of the same methods and sources of information used for HCV 5, such as participatory mapping and consultations, will be useful. Certain sites and resources qualify as HCV 6 even if those who value the cultural resources do not live locally (for example, where communities maintain active cultural rituals linked to areas inhabited by their ancestors, or perform pilgrimages to sacred sites far from their homes); therefore it is important to identify all affected communities, not just those immediately adjacent to the sites or resources, with special attention to groups with less power and influence.

Participatory consultations should be carried out with all affected settlements and communities, with special attention to affected indigenous peoples. Situations where there is clear evidence of a community agreement (agreement by consensus, by a majority or by legitimate representatives) that certain sites or resources are culturally significant or critical for them will present strong justification for HCV 6. Consultations of this kind should be held with the appropriate people as there are often certain people who hold this kind of specialized knowledge (e.g. shaman, elders). Another challenge is that cultural information such as this may be secret and it can therefore be difficult to obtain accurate information. For some communities the location of sacred sites is secret, making mapping a particular challenge. The choice of methods is important as it may not always be culturally appropriate to take photos and video, for example. It is also important to understand any possible sensitivity or risk involved with sharing customary tenure maps. This is why it is important to establish trust with local people and to work with social experts such as anthropologists if possible.







## HCV 6

### 3.6.3 | Case Study Cultural values



|                           |                                                                                  |
|---------------------------|----------------------------------------------------------------------------------|
| <b>Site</b>               | Tumbang Titi Subdistrict, Ketapang District, West Kalimantan Province, Indonesia |
| <b>Ecosystem</b>          | Tropical Forest area of West Kalimantan, Indonesia                               |
| <b>Assessment context</b> | HCV assessment for Oil Palm plantation development                               |

The majority of Tumbang Titi sub-districts are inhabited by Pesaguan Dayak communities who live along the Pesaguan River. A unique cultural feature of the Pesaguan Dayak community in the area is that they have built dohas as part of their way of life.

Dohas (or pedohasan) are small settlements, usually inhabited by four to six households or family heads, which are usually built near or in the agricultural fields of communities. Dohas are built to facilitate agricultural activities including maintenance of the fields (usually dry paddy fields), because their fields are located some distance from the main settlements. Dohas are important sites for Pesaguan Dayak cultural identity, symbolizing both life and death. Life, through the production of rubber plantations, paddy fields and maintenance of fruit farms. All these farming activities are all conducted using dohas as a center for monitoring and collecting or harvesting. Farmers stay a few days to weeks in dohas to ensure the field harvest is safe from any disturbances. Death, because dohas are also used as family burial sites.

Because they are culturally and spiritually important, dohas remain protected even if they have long been uninhabitable. When these places are not treated properly according to the tradition of the Dayak community, there are certain ceremonies which are performed for their maintenance. Due to their importance, old and abandoned dohas are still regarded as a sign of ownership over the fields (e.g. rubber plantations and fruit trees) by the people or family line who established the dohas in the first place.

Each village in Tumbang Titi has places that are considered sacred, containing spiritual values that are recognized and respected by the community, because of this, dohas are considered to be **HCV 6**.







**Section 4 provides an overview of the key elements which should be included in good quality HCV assessment reports. This is based on the documents used by the HCV Resource Network when conducting peer reviews of HCV assessment reports.**

# 4

## Preparation of the HCV assessment report

The HCVRN provides guidance on the preparation of good quality HCV reports, the main elements of which are summarized below. Note that sustainability standards such as RSPO have specific reporting formats for HCV public summary reports. The appropriate format must be followed depending on the assessment context. The relevant sections from this document are referenced below to help explain what is expected in terms of HCV report content and quality.

### 1. Executive summary

### 2. Scope of the assessment

- a) Is the assessment area and surrounding landscape clearly defined? (see 2.3)
- b) Is there a basic summary of the company and its operations in the area?
- c) Are the potential impact and scale of proposed operations adequately described? (see 2.1)
- d) Did exploitation of any kind (especially clearance) take place prior to the assessment, and if so, how are such areas treated?
- e) Is the purpose of the HCV assessment clear?

### 3. Wider landscape context and significance of the assessed area (see 2.3 and 3.1)

- a) Are the key social and biological features of the wider landscape clearly described? Such features include:
  - Protected areas
  - Regional or sub-regional biogeography (is the assessment area part of a distinct and/or narrowly restricted biogeographic region?)
  - Location and status of areas of natural vegetation (including a description of ecosystem types, size, quality)
  - Occurrence of known populations of species of global concern
  - Major landforms, watersheds and rivers, geology and soils
  - Human settlements and infrastructure, agricultural areas
  - Social context (ethnicity, major social trends and land use activities)
  - History of land use and development trends, including future plans (e.g. spatial planning maps, development initiatives and existing/proposed commercial exploitation and production licenses)

### 4. HCV assessment process

#### 4.1. Composition and qualifications of the assessment team (see 2)

- a) Did the team include or have adequate access to relevant expertise to assess biological and social values?

#### 4.2. Data sources and data collection methodologies (see 2.4)

- a) Are data sources and data collection methodologies clearly described or referenced and summarised (and presented in annexes if appropriate), and are they adequate to identify HCVs? This section should cover:
  - Background and desk research
  - Field data collection, if any
- b) Were reasonable efforts made to fill gaps in the data, proportionate to the impact and scale of the operations?
  - Evidence that relevant stakeholders were appropriately consulted

- Is this documented in a verifiable manner?
- Were their views or the information they provided incorporated into the relevant process?
- Were conclusions fed back to consultees as appropriate?
- e) Were appropriate existing initiatives engaged wherever possible (including existing local or international social, ecological or biological conservation initiatives)?

## 5. Identification, location and status of each HCV (see 3)

### 5.1 Addressing all six HCVs

- a) All six HCVs are addressed in the report
- b) If one or more HCVs are not addressed, there is adequate justification for this?

### 5.2. Data quality

- a) Are data detailed, recent and complete enough to make informed decisions on presence/status/location of the HCV?
- b) Is the precautionary approach used?

### 5.3. Reference to HCV national interpretations (see 1.3.3)

- a) Has a National Interpretation of HCVs been used, if it exists, in combination with the generic HCV Common Guidance?
- b) Are decisions to apply national interpretation definitions/thresholds, or to deviate from its recommendations, adequately explained and justified?

### 5.4. Decision on HCV status

- a) Is the HCV present, potentially present or absent in the assessed area?
- b) Has the presence of the HCV in the wider landscape and nationally, regionally or globally been addressed?
- c) Is the HCV clearly defined and described?

### 5.5. Mapping

Maps of HCV occurrence should be presented at an adequate level of resolution and sufficient completeness for management decisions to be made. If HCV occurrence is not mapped to this level, there should be a sound justification as to why this is the case, and an adequate process should be defined for mapping the HCV(s), prior to commencing any operation.

## 6 HCV Management and monitoring (see 1.2.2 and 1.2.3)

HVC identification is only part of the process – any meaningful application of the HCV approach includes designing management regimes appropriate for maintaining the identified values and implementation of monitoring procedures to verify that the management regime is suited for the purpose. This guidance document focuses on HCV identification, but more general guidance on HCV management and monitoring will be produced by the HCVRN by early 2014. In the meantime, there are various resources available at the HCVRN Website at

<http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/resources/folder.2006-09-29.6584228415/background-documents#managing-hcvs>

For examples of HCV reports, see

<http://www.hcvnetwork.org/resources/assessments/projects>

For detailed information on peer reviews of HCV assessment reports, see

<http://www.hcvnetwork.org/resource-network/our-services/technical-panel-peer-review>



Bowyer, C., G. Tucker, H. By & D. Baldock. 2010. Operationalising criteria to protect highly biodiverse grasslands under the Renewable Energy Directive (2009/28/EC), Institute for European Environmental Policy: London.

FSC. 2012 (October). Global FSC certificates: type and distribution.  
<https://ic.fsc.org/facts-figures.19.htm>

FSC Principles & Criteria v. 5.0 (2012) and FSC Principles & Criteria v. 4.0 (2002)  
<https://ic.fsc.org/principles-and-criteria.34.htm>

HCVRN. 2010 (September). Reviewing High Conservation Value reports: HCV Resource Network guidance for peer reviews of HCV assessment reports - Version 2.1.  
<http://www.hcvnetwork.org/resources/hcv-network-governance/Guidance%20on%20HCV%20assessment%20reviews%20-%20Version%202.1-%20updated%20September%202010.pdf>

Millennium Ecosystem Assessment. 2005. Hassan, R., Scholes R., and A. Neville, eds. Ecosystems and human well-being: current state and trends, volume 1, chapter 2: Analytical approaches for assessing ecosystem condition and human well-being. Island Press: London.

Proforest. 2008a (July). Good practice guidelines for High Conservation Value assessments: A practical guide for practitioners and auditors.  
<http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/HCV%20good%20practice%20-%20guidance%20for%20practitioners.pdf>

Proforest. 2008b (April). Assessment, management and monitoring of High Conservation Value Forest: A practical guide for forest managers.  
<http://www.hcvnetwork.org/resources/folder.2006-09-29.6584228415/hcvf%20-%20practical%20guide%20for%20forest%20managers.pdf>

Proforest. No date. Defining High Conservation Values at the national level: a practical guide. Part 2, HCV Global Toolkit.  
<http://www.hcvnetwork.org/resources/global-hcv-toolkits/hcvf-toolkit-part-2-final.pdf>

Proforest. 2003. Jennings, S., R. Nussbaum, N. Judd and T. Evans with: T. Azevedo, N. Brown, M. Colchester, T. Iacobelli, J. Jarvie, A. Lindhe, T. Synnott, C. Vallejos, A. Yaroshenko and Z. Chunquan. 2003 (December). The High Conservation Value Forest Toolkit.  
<http://www.hcvnetwork.org/resources/global-hcv-toolkits/hcvf-toolkit-part-1-final.pdf>

Synnott, T. with M. Colchester, N. Dudley, N. Ghaffar, A. Gough, D. Hall, A. Lindhe, D.R. Muhtaman, J. Palmer, R. Robertson, G. Rosoman, C. Stewart, C. Thies and M. Tyschianouk. 2012 (June). FSC guidelines for principle 9 and high conservation values. Forest Stewardship Council.

# Annex 1

## Evolution of HCV definitions

### **FSC Standard V 4.0 (2002) Glossary:**

High Conservation Value Forests: High Conservation Value Forests are those that possess one or more of the following attributes:

- a) forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance
- b) forest areas that are in or contain rare, threatened or endangered ecosystems
- c) forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)
- d) forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

In **2003 Proforest** turned the 4 attributes above from the FSC Standard V 4.0 Glossary into 6 HCV categories (see definition in table below). This was elaborated in the **HCV Toolkits** <http://www.hcvnetwork.org/resources/global-hcv-toolkits>

In **2005**, the **HCV Resource Network Charter** acknowledged that these values apply across all landscapes and dropped the “forest” language in the definitions. The 2005 HCV Resource Network Charter defines HCVs as:

High Conservation Value areas are critical areas in a landscape which need to be appropriately managed in order to maintain or enhance High Conservation Values (HCVs). There are six main types of HCV area, based on the definition originally developed by the Forest Stewardship Council for certification of forest ecosystems.

Most recently, **FSC V 5.0 (2012)** along with the HCV Resource Network have moved the focus from areas to values – reflected in the updated definitions.

|              | PROFOREST TOOLKITS (2003)                                                                                                                                                                                                                                                                   | HCV RESOURCE NETWORK DEFINITIONS (2005)                                                                                                                                                                     | FSC STANDARD V 5.0 (2012)                                                                                                                                                                                                                                                                                                                                        |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 1</b> | Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).                                                                                                                                  | Areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).                                                         | Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.                                                                                                                                                                                       |
| <b>HCV 2</b> | Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance. | Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance. | Large landscape-level ecosystems and ecosystem mosaics 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.                                                                                              |
| <b>HCV 3</b> | Forest areas that are in or contain rare, threatened or endangered ecosystems.                                                                                                                                                                                                              | Areas that are in or contain rare, threatened or endangered ecosystems.                                                                                                                                     | Rare, threatened, or endangered ecosystems, habitats or refugia.                                                                                                                                                                                                                                                                                                 |
| <b>HCV 4</b> | Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).                                                                                                                                                                     | Areas that provide basic ecosystem services in critical situations (e.g. watershed protection, erosion control).                                                                                            | Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.                                                                                                                                                                                                                 |
| <b>HCV 5</b> | Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).                                                                                                                                                                                            | Areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).                                                                                                                   | 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.                                                                                                                   |
| <b>HCV 6</b> | Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).                                                                                        | Areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).               | 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. |



## Annex 2



### HCVs in grasslands

#### HCV Grassland matrix

Most experience to date has focused on HCV application on forests and much explanatory material already exists to help. Knowledge of HCV for grasslands and freshwater is much less well developed; for this reason some additional details are provided here, summarising how HCV might be applied in these ecosystems. (Dudley, N. 2013. *High Conservation Value Grasslands: Draft paper on defining HCV in grassland ecosystems. Equilibrium Research.*)

| KEY TERMS - INTERPRETATION FOR GRASSLANDS                                                                                              | INDICATOR                                                                                                                                                                                                                                                               | DATA SOURCES/APPROACH                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 1 GLOBALLY, REGIONALLY OR NATIONALLY SIGNIFICANT CONCENTRATIONS OF GRASSLAND BIODIVERSITY</b>                                   |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                         |
| <b>Rare, threatened or endangered (RTE) species</b>                                                                                    | <ul style="list-style-type: none"> <li>• Presence of RTE species (several RTE species, a substantial population of one RTE species, refugia).</li> <li>• Presence of recognised protected areas</li> <li>• Unprotected grasslands identified as IPAs or KBAs</li> </ul> | <ul style="list-style-type: none"> <li>• Global and national Red Lists ("vulnerable" and above), AZE, local information sources, World Database on Protected Areas (WDPA)</li> <li>• List of KBAs or equivalent (e.g., Important Bird Areas)</li> </ul> |
| <b>Endemic species</b>                                                                                                                 | <ul style="list-style-type: none"> <li>• Presence of endemic (ecoregion or country level) or highly range-limited species</li> <li>• Presence of recognised protected areas</li> <li>• Unprotected grasslands identified as IPAs or KBAs</li> </ul>                     | <ul style="list-style-type: none"> <li>• Lists of Endemic Bird Areas, local information</li> <li>• WDPA</li> </ul>                                                                                                                                      |
| <b>Concentrations - Critical temporal use (e.g. for migration)</b>                                                                     | <ul style="list-style-type: none"> <li>• Mammal migration routes or flyways for birds &amp; insects</li> <li>• Presence of recognised protected areas</li> <li>• Unprotected grasslands identified as IPAs or KBAs</li> </ul>                                           | <ul style="list-style-type: none"> <li>• Regional data on flyways and migration routes from Birdlife International, Convention on Migratory Species, etc</li> <li>• WDPA</li> </ul>                                                                     |
| <b>HCV 2 GLOBALLY, REGIONALLY OR NATIONALLY SIGNIFICANT LARGE LANDSCAPE LEVEL GRASSLANDS</b>                                           |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                         |
| <b>Large, mainly native and/or long-established grasslands and grassland mosaics containing the great majority of expected species</b> | <ul style="list-style-type: none"> <li>• Large size: probably &gt;50,000 ha although needs to be set regionally</li> <li>• Predominantly native species composition</li> <li>• Continuity in ecological history</li> </ul>                                              | <ul style="list-style-type: none"> <li>• Maps, surveys, satellite imagery</li> <li>• Species surveys</li> <li>• Length of time that grassland has had a common disturbance pattern (either natural or long-established human management)</li> </ul>     |
| <b>HCV 3 GRASSLAND AREAS THAT ARE IN OR CONTAIN RARE, THREATENED OR ENDANGERED ECOSYSTEMS</b>                                          |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                         |
| <b>Rare, threatened or endangered grassland ecosystems</b>                                                                             | <ul style="list-style-type: none"> <li>• Presence of rare grassland ecosystems: including both natural rare ecosystems and those that are rare because of conversion and degradation</li> </ul>                                                                         | <ul style="list-style-type: none"> <li>• Eventually, the IUCN Red List of Endangered Ecosystems. In the meantime, information from systematic conservation planning or expert opinion</li> </ul>                                                        |
| <b>Remnant ecosystems or habitats contained within otherwise modified grasslands</b>                                                   | <ul style="list-style-type: none"> <li>• Presence of rare ecosystems within the grassland (e.g. fragments of native grassland in a predominantly converted area; lakes, streams or other inland waters, riparian woodland)</li> </ul>                                   | <ul style="list-style-type: none"> <li>• Field surveys</li> <li>• Satellite images</li> <li>• Literature review</li> </ul>                                                                                                                              |

| KEY TERMS - INTERPRETATION FOR GRASSLANDS                                                                          | INDICATOR                                                                                                                                                                              | DATA SOURCES/APPROACH                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 4 BASIC ECOSYSTEM SERVICES IN CRITICAL SITUATIONS</b>                                                       |                                                                                                                                                                                        |                                                                                                                                                                                                 |
| <b>Grasslands critical to water catchments and aquifers</b>                                                        | <ul style="list-style-type: none"> <li>Native grassland that provides a filtering and purifying role for recharge of aquifers and/or surface water catchments</li> </ul>               | <ul style="list-style-type: none"> <li>Information from water authorities</li> <li>Hydrological surveys</li> </ul>                                                                              |
| <b>Grasslands critical to erosion and desertification control</b>                                                  | <ul style="list-style-type: none"> <li>Native vegetation that help to prevent erosion, landslip, gulleying, dust storms and desertification</li> </ul>                                 | <ul style="list-style-type: none"> <li>Topographic surveys, soil surveys, use of satellite imagery</li> </ul>                                                                                   |
| <b>Grasslands providing buffering against flooding</b>                                                             | <ul style="list-style-type: none"> <li>Wet, seasonally-flooded grassland areas that can absorb sudden influxes of floodwater</li> </ul>                                                | <ul style="list-style-type: none"> <li>Hydrological surveys, interviews with water authorities, river managers and farmers, maps and satellite images</li> </ul>                                |
| <b>Grassland providing critical habitat for pollinating species.</b>                                               | <ul style="list-style-type: none"> <li>Healthy populations of pollinating animals (bees, butterflies, moths, some birds etc)</li> </ul>                                                | <ul style="list-style-type: none"> <li>Surveys</li> </ul>                                                                                                                                       |
| <b>HCV 5 GRASSLAND AREAS AND VALUES FUNDAMENTAL TO MEETING BASIC NEEDS OF LOCAL COMMUNITIES</b>                    |                                                                                                                                                                                        |                                                                                                                                                                                                 |
| <b>Grasslands providing permanent or seasonal grazing to local communities and/or indigenous peoples</b>           | <ul style="list-style-type: none"> <li>Presence of permanent or nomadic pastoralists</li> </ul>                                                                                        | <ul style="list-style-type: none"> <li>Interviews, surveys</li> </ul>                                                                                                                           |
| <b>Grasslands providing wild products (game, food plants, livestock fodder, medicines, materials etc)</b>          | <ul style="list-style-type: none"> <li>Evidence of regular or critical irregular use of resources from grasslands</li> </ul>                                                           | <ul style="list-style-type: none"> <li>Interviews, surveys</li> </ul>                                                                                                                           |
| <b>HCV 6 GRASSLAND AREAS AND VALUES CRITICAL TO CULTURAL IDENTITY</b>                                              |                                                                                                                                                                                        |                                                                                                                                                                                                 |
| <b>Grasslands supporting important traditional lifestyles and subsistence values dependent on the ecosystem</b>    | <ul style="list-style-type: none"> <li>Traditional communities with lifestyles dependent on particular grassland habitats</li> </ul>                                                   | <ul style="list-style-type: none"> <li>Surveys, interviews</li> </ul>                                                                                                                           |
| <b>Grasslands where the traditional management system itself has cultural value beyond the immediate community</b> | <ul style="list-style-type: none"> <li>Existence of culturally-significant management systems (i.e. cultural values that transcend questions of livelihoods or subsistence)</li> </ul> | <ul style="list-style-type: none"> <li>Presence of natural and cultural World Heritage sites, MAB biosphere reserves or other national or regional designations. Surveys, interviews</li> </ul> |
| <b>Grasslands supporting important sacred or faith-based values</b>                                                | <ul style="list-style-type: none"> <li>Presence of sacred natural sites or sacred landscapes</li> </ul>                                                                                | <ul style="list-style-type: none"> <li>Surveys, interviews</li> </ul>                                                                                                                           |
| <b>Grasslands important to national cultural identity</b>                                                          | <ul style="list-style-type: none"> <li>Presence of iconic sites or landscapes</li> </ul>                                                                                               | <ul style="list-style-type: none"> <li>Presence of natural World Heritage sites, MAB biosphere reserves or other national or regional designations. Surveys, interviews</li> </ul>              |

**Note** that in a number of cases (in fact the majority of cases) the elements can apply to both “natural” and “cultural” grasslands and that furthermore it may sometimes be difficult to distinguish between the two. Cultural management systems may in themselves sometimes contain HCVs and this is addressed in HCV 6 above.

## Annex 3



# HCVs in freshwater systems

### HCV Freshwater matrix

Most experience to date has focused on HCV application on forests and much explanatory material already exists to help. Knowledge of HCV for grasslands and freshwater is much less well developed; for this reason some additional details are provided here, summarising how HCV might be applied in these ecosystems. (Derived from Abell, R., S. Morgan, and A. Morgan. 2013. *Taking HCV from forests to freshwaters*. In preparation.)

| KEY TERMS - INTERPRETATION FOR FRESHWATER                                                  | EXAMPLES                                                                                                                                                                                                                                                                                                                                                                                                                                 | DATA SOURCES/APPROACH <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 1 GLOBALLY, REGIONALLY OR NATIONALLY SIGNIFICANT CONCENTRATIONS OF BIODIVERSITY</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Rare, threatened or endangered (RTE) species</b>                                        | <ul style="list-style-type: none"> <li>• Presence of RTE species dependent on freshwaters<sup>2</sup> for all or a portion of their life cycles (several RTE species, a substantial population of one RTE species, refugia).</li> <li>• Presence of recognised protected areas designated in whole or part to conserve freshwater RTE species or habitats</li> <li>• Unprotected freshwaters identified as KBAs or equivalent</li> </ul> | <ul style="list-style-type: none"> <li>• Global and national Red Lists ("vulnerable" and above)</li> <li>• World Database on Protected Areas (WDPA) (NOTE: Ramsar Sites are included in the WDPA but some are represented only by a central geographic coordinate. Ramsar Information Sheets should be consulted for detailed information on species.)</li> <li>• National/provincial databases of protected wild/scenic/heritage rivers</li> <li>• List of KBAs or equivalent (e.g., Important Bird Areas, Important Plant Areas) (NOTE: freshwater KBAs have not been formally identified for most geographies.)</li> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>• Field surveys</li> </ul>                                                                                                                                                                                                                                      |
| <b>Endemic freshwater species</b>                                                          | <ul style="list-style-type: none"> <li>• Presence of endemic (ecoregion or country level) or highly range-limited freshwater-dependent species</li> <li>• Presence of recognised protected areas designated in whole or part to conserve endemic or range-restricted freshwater species</li> <li>• Unprotected freshwaters identified as KBAs or equivalent</li> </ul>                                                                   | <ul style="list-style-type: none"> <li>• AZE sites (NOTE: AZE sites have not been identified for freshwater fish or invertebrates)</li> <li>• Country-level or province/state-level lists of endemic species</li> <li>• FishBase (NOTE: Lists of endemic species provided only at country/island level.)</li> <li>• Freshwater Ecoregions of the World (FEOW) (NOTE: Fish species endemic to individual freshwater ecoregions available upon request.)</li> <li>• WildFinder for freshwater-dependent mammals, birds, amphibians, and reptiles</li> <li>• BioFresh (<a href="http://www2.freshwaterbiodiversity.eu/">http://www2.freshwaterbiodiversity.eu/</a>) (NOTE: Data portal is in the process of being populated.)</li> <li>• WDPA</li> <li>• National databases of protected wild/scenic/heritage rivers</li> <li>• List of KBAs or equivalent</li> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>• Field surveys</li> </ul> |

<sup>1</sup> Nearly all global and national-level datasets will provide information on what might occur in a given assessment area, but in most cases they cannot be used in isolation to determine what does occur in a given location

<sup>2</sup> For the purposes of this document, 'freshwaters' is synonymous with 'inland wetland' as defined by the Ramsar Convention's 'Classification System for Wetland Type.'



| KEY TERMS - INTERPRETATION FOR FRESHWATER                                                                                                         | EXAMPLES                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DATA SOURCES/APPROACH <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 1 GLOBALLY, REGIONALLY OR NATIONALLY SIGNIFICANT CONCENTRATIONS OF BIODIVERSITY</b>                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Areas of critical temporal use, including flow or thermal refugia, spawning/breeding, nursery, migratory, feeding, or over-wintering areas</b> | <ul style="list-style-type: none"> <li>• Migratory or critical dispersal routes for fish, wetland birds, aquatic-dependent mammals/amphibians/reptiles, or aquatic invertebrates (e.g. floodplains, deep or vernal pools, river channel corridors)</li> <li>• Presence of recognised protected areas designated in whole or part to conserve freshwaters of critical use during certain times</li> <li>• Unprotected freshwaters identified as IBAs, IPAs or KBAs</li> </ul> | <ul style="list-style-type: none"> <li>• Regional data on flyways and migration routes from Birdlife International, Convention on Migratory Species, etc</li> <li>• Local or national maps of floodplains, vernal pools and other temporary wetlands, springs, etc.</li> <li>• List of KBAs or equivalent</li> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises. (NOTE: Some 'terrestrial' mammals/birds rely on riparian/floodplain corridors for migration/dispersal.)</li> <li>• Field surveys &amp; satellite imagery</li> </ul> |
| <b>HCV 2 GLOBALLY, REGIONALLY OR NATIONALLY SIGNIFICANT LARGE LANDSCAPE LEVEL ECOSYSTEMS AND MOSAICS</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Freshwaters with intact hydropatterns</b>                                                                                                      | <ul style="list-style-type: none"> <li>• Rivers with natural flow regimes</li> <li>• Lakes and wetlands with natural hydroperiods</li> </ul>                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• WDPA and Ramsar Information Sheets</li> <li>• National databases of protected wild/scenic/heritage rivers</li> <li>• Global Water Systems Project maps</li> <li>• Local information sources, literature review, and expert knowledge (especially hydrologists), including inputs to conservation planning exercises.</li> <li>• Field surveys</li> </ul>                                                                                                                                                                                                                 |
| <b>Freshwaters with unfragmented longitudinal connectivity</b>                                                                                    | <ul style="list-style-type: none"> <li>• Rivers without upstream/downstream barriers preventing species from completing life cycles</li> </ul>                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• WDPA and Ramsar Information Sheets</li> <li>• National databases of protected wild/scenic/heritage rivers</li> <li>• Global Water Systems Project maps</li> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>• Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                                                                                   |
| <b>Freshwaters with unfragmented lateral connectivity</b>                                                                                         | <ul style="list-style-type: none"> <li>• Unmodified river channels with dynamic connection to floodplain</li> </ul>                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• WDPA and Ramsar Information Sheets</li> <li>• National databases of protected wild/scenic/heritage rivers</li> <li>• Local information sources, literature review, and expert knowledge (especially hydrologists), including inputs to conservation planning exercises.</li> <li>• Field surveys and satellite imagery</li> </ul>                                                                                                                                                                                                                                        |
| <b>Freshwaters with natural water quality conditions</b>                                                                                          | <ul style="list-style-type: none"> <li>• Unmodified thermal, sediment, and nutrient regimes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• WDPA and Ramsar Information Sheets</li> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>• Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                                                                                                                                                                                                       |
| <b>Relatively intact watersheds/catchments</b>                                                                                                    | <ul style="list-style-type: none"> <li>• Land cover conversion below threshold of concern</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• HydroSHEDS or equivalent national/local hydrographic dataset, coupled with land use/land cover data</li> <li>• WDPA</li> <li>• Global Water Systems Project maps</li> <li>• Satellite imagery</li> </ul>                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Freshwaters with intact native communities</b>                                                                                                 | <ul style="list-style-type: none"> <li>• Lakes, rivers, and wetlands without invasive species</li> </ul>                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>• Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>• Field surveys</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |

| KEY TERMS - INTERPRETATION FOR FRESHWATER                                                                       | EXAMPLES                                                                                                                                                                                                                                                                           | DATA SOURCES/APPROACH <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HCV 3 RARE, THREATENED OR ENDANGERED ECOSYSTEMS</b>                                                          |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Rare, threatened or endangered freshwater ecosystems</b>                                                     | <ul style="list-style-type: none"> <li>E.g. karstic systems, peatlands</li> </ul>                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                                                                                       |
| <b>HCV 4 BASIC ECOSYSTEM SERVICES IN CRITICAL SITUATIONS</b>                                                    |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Watershed/catchment areas critical to managing/maintaining extreme flow events (e.g., flooding, drought)</b> | <ul style="list-style-type: none"> <li>Floodplains &amp; other wetlands</li> <li>Springs</li> </ul>                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Local or national maps of floodplains/wetlands or springs</li> <li>Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                    |
| <b>Vegetated buffer strips or intact floodplains</b>                                                            | <ul style="list-style-type: none"> <li>Riparian forests</li> <li>Unleveed floodplains</li> </ul>                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Local or national maps of floodplains or riparian zones</li> <li>Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                      |
| <b>Groundwater recharge zones</b>                                                                               | <ul style="list-style-type: none"> <li>Areas with a critical recharging effect on aquifers used for potable water</li> <li>Areas with a critical recharging effect on aquifers supplying water to freshwaters that in turn support additional services (e.g. fisheries)</li> </ul> | <ul style="list-style-type: none"> <li>Local or national groundwater recharge zone maps</li> <li>Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul>                                                                                                                                                             |
| <b>Watershed/catchment areas critical to maintaining downstream flow regimes</b>                                | <ul style="list-style-type: none"> <li>Water towers (high surface water yield areas)</li> </ul>                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>HydroSHEDS or equivalent national/local hydrographic dataset, coupled with best available hydrologic data</li> <li>Natural Capital Project's RIOS (Resource Investment Optimization System) or similar tools</li> <li>Local information sources, literature review, and expert knowledge, including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul> |
| <b>Watershed/catchment areas critical to maintaining water quality characteristics</b>                          | <ul style="list-style-type: none"> <li>Vegetated areas upstream of critical water supplies</li> </ul>                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Natural Capital Project's RIOS (Resource Investment Optimization System) or similar tools</li> <li>Local information sources, literature review, and expert knowledge (especially water managers), including inputs to conservation planning exercises.</li> <li>Field surveys &amp; satellite imagery</li> </ul>                                                                                        |
| <b>HCV 5 BASIC NEEDS OF LOCAL COMMUNITIES</b>                                                                   |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Sites and resources fundamental to meeting the basic needs of local communities</b>                          | <ul style="list-style-type: none"> <li>Water sources necessary for access to basic drinking water and basic access to sanitation</li> <li>Freshwater animal or plant populations relied upon by local communities</li> </ul>                                                       | <ul style="list-style-type: none"> <li>Local information sources, literature review, and expert knowledge</li> <li>Community interviews/surveys</li> <li>Field surveys</li> </ul>                                                                                                                                                                                                                                                               |
| <b>HCV 6 CULTURAL VALUES</b>                                                                                    |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Sites and resources of critical cultural importance</b>                                                      | <ul style="list-style-type: none"> <li>Water bodies with high religious or cultural significance (e.g. waterfalls, lakes)</li> <li>Freshwater products with cultural values</li> </ul>                                                                                             | <ul style="list-style-type: none"> <li>Community interviews/surveys</li> <li>Anthropological studies</li> </ul>                                                                                                                                                                                                                                                                                                                                 |

# Annex 4

## Image credits

All images, diagrams and maps are ©Proforest unless otherwise stated

| Image description                                                                                                                      | Image credit        | Page no. |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| Sumatran Tiger                                                                                                                         | Brian McKay         | 26       |
| Case Study HCV 1<br>Rajong River Sarawak (Borneo), Malaysia                                                                            | Chris Elliott       | 29       |
| Case Study HCV 1<br>Bornean orang-utan & Proboscis monkey                                                                              | Alain Compost       | 29       |
| Case Study HCV 2<br>Boreal forest of Saskatchewan Canada                                                                               | Tom Clark           | 33       |
| Case Study HCV 3<br>FVSA_pampas deer in Bahía Samborombón                                                                              | Fernando Miñarro    | 36       |
| Case Study HCV 4<br>Gorge of the Gardiana River, Portugal                                                                              | Hartmut Jungius     | 41       |
| Case Study HCV 4<br>Cork oaks ( <i>Quercus suber</i> ), Eucalyptus and pine trees in the montados. Monchique, Algarve region, Portugal | Claire Doole        | 41       |
| Case Study HCV 4<br>“Montados” landscape, Portugal                                                                                     | Sebastian Rich      | 41       |
| Case Study HCV 6<br>Dohas of West Kalimantan, Indonesia                                                                                | Dwi Rahmad Muhtaman | 51       |



