5.5 High Conservation Values in the landscape, West Kalimantan

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Introduction

The concept of High Conservation Value (HCV) was proposed in 1999 as one of the principles of the sustainable forest management standards developed by the Forest Stewardship Council (FSC).[1] According to the HCV Resource Network, "High Conservation Values (HCVs) are biological, ecological, social or cultural values which are considered outstandingly significant or critically important, at the national, regional or global level."[2] The HCV concept was designed to help forest managers improve the social and environmental sustainability of wood production. Under its two-step process, areas with exceptional social, cultural or environmental values in or near a forest management unit (FMU) are identified and designated. A system of management and monitoring is then implemented to guarantee that these values will be maintained and enhanced.

Although the HCV concept was originally designed for the management of natural production forests,[3] the concept rapidly gained popularity in other contexts, such as industrial timber and oil palm plantations (Consortium of the revision of the HCV toolkit, 2008). HCV assessment is a requirement in processes such as the Roundtable for Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) certifications for oil palm plantation, and the FSC process for certification of natural |and plantation forest management.

As a planning tool, HCVs help societies achieve a rational balance between environmental conservation and economic development.

In Indonesia, 450 certified management units — covering natural forest production, pulp plantation and oil palm plantations — have defined and are managing their HCV areas. More than 500,000 hectares (ha) of production area in Indonesia have been identified and designated as HCV area. HCV areas are managed by the private sector, while conservation areas (which are established by the government) are managed by the Ministry of Forestry.

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The fundamental basis of the HCV concept is that areas with high conservation values are not necessarily designated as protection zones where development is forbidden. Rather, the HCV approach is a planning tool that helps society achieve a rational balance between environmental conservation and economic development. HCV is also suitable for use by governments to undertake landscape conservation planning (LCP). LCP ensures the maintenance of fundamentally interdependent biological, social and ecological values that require integrated management.

This article describes the use of HCV as the basis of landscape-level conservation planning at the scale of a watershed unit.

The study area

In order to test the potential of the HCV concept as a basis for LCP, TBI conducted a study in the Pawan watershed, Ketapang District, West Kalimantan Province. The Pawan watershed covers about 14,171 km^2, about 40% of Ketapang District. The watershed was originally dominated by lowland natural dipterocarp forest, but during the past 20 years it has experienced a high rate of forest conversion, mainly to oil-palm plantation. The watershed was selected as a study site for two reasons:

- many concession-holders in the area have identified and are managing HCV areas; and
- the area is representative of the process of land-cover change in Kalimantan.

The watershed ranges in altitude from 0–1,250 metres asl. It is dominated by flat and gently sloping areas, with hilly terrain in the lowland and (sub) montane zones. Gunung Palung National Park is located in the hills in the lowland zone and is home to 7,000 Bornean orangutan *(Pongo pygmaeus)*, about 5–10% of the world's remaining wild orangutans.

The lowland zone consists of mangrove forest, coastal forest, riparian forest, lowland forest, mixed dipterocarp forest, heath, peat swamp forests, freshwater swamps and wetlands. Mixed dipterocarp forests constitute the largest ecosystem, followed by the lowland zone, swamp forest ecosystem and montane forest. Land cover has changed rapidly from secondary forest to oil-palm plantations. Illegal, small-scale gold mining has spread through the upper and middle parts of the catchment, causing severe river pollution. The main threats to the national park are illegal logging and encroachment, which has led to forest fires and destruction of orangutan habitat.

Methodology

HCV areas are defined as areas that possess one or more HCVs. The revised HCV Toolkit for Indonesia (Table 1) defines six HCVs with sub-values. These sub-values can be

classified in one of three categories: biodiversity values (HCV 1, 2 and 3); ecosystem services values (HCV 4); and social and cultural values (HCV 5 and 6).

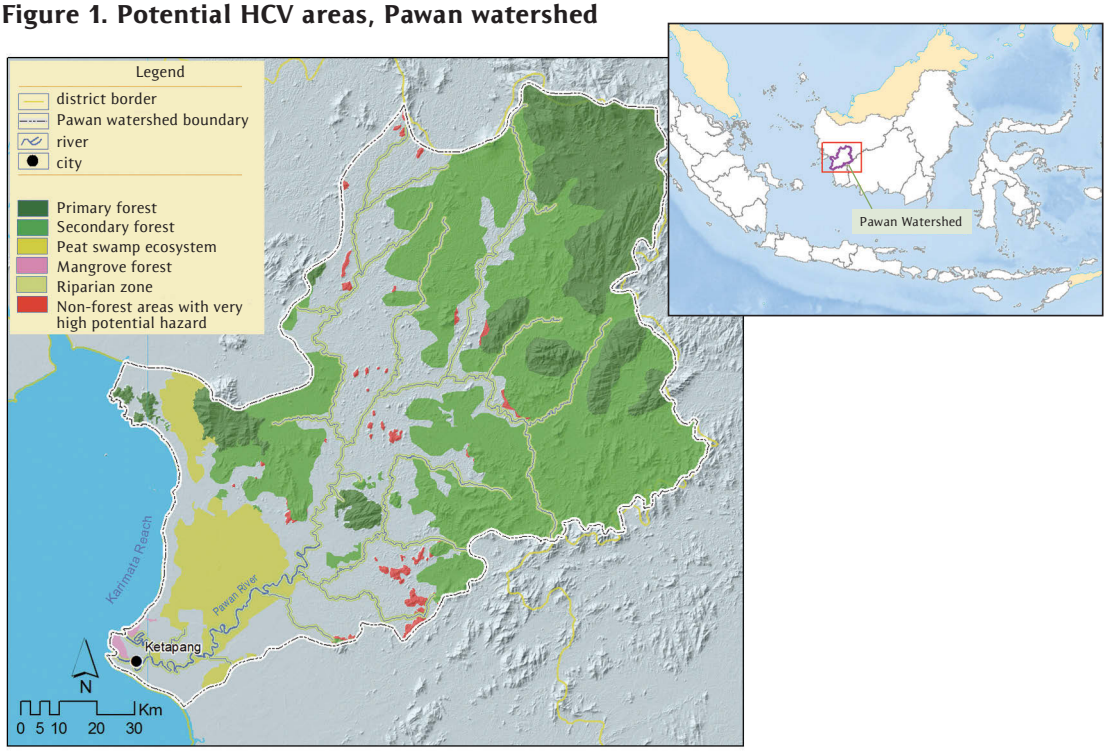
Table 1. Revised High Conservation Values for Indonesia

HCV 1	Areas with important levels of biodiversity	
	HCV 1.1	areas that contain or provide biodiversity support function to protection or conservation areas
	HCV 1.2	critically endangered species
	HCV 1.3	areas that contain habitat for viable populations of endangered, restricted range or protected species
	HCV 1.4	areas that contain habitat of temporary use by species or congregations of species
HCV 2	Natural landscapes and dynamics	
	HCV 2.1	large natural landscapes with capacity to maintain natural ecological processes and dynamics
	HCV 2.2	areas that contain two or more contiguous ecosystems
	HCV 2.3	areas that contain representative populations of most naturally occurring species
HCV 3	Rare or endangered ecosystems	
HCV 4	Environmental services	
	HCV 4.1	areas or ecosystems important for the provision of water and prevention of floods for downstream communities
	HCV 4.2	areas important for the prevention of erosion and sedimentation
	HCV 4.3	areas that function as natural barriers to the spread of forest or ground fire
HCV 5	Natural areas critical for meeting the basic needs of local people	
HCV 6	Areas critical for maintaining the cultural identity of local communities	

Source: www.hcvnetwork.org/resources/national-hcv-interpretations/Toolkit%20HCVF%20English%20version_final-26Jan10.pdf.

The study started by assessing potential HCVs, especially HCVs 1 to 4. HCVs were identified through interpretation of secondary data (topographic map, land system maps, etc.) and existing land cover (based on Landsat imagery interpretation), and supported by ground-truthing. The resulting map (Figure 1) was then used as a reference to evaluate the actual HCV (those areas defined and managed by government as conservation/protected areas and by the private sector as HCV areas).[4] To understand how HCVs are identified in the private sector, seven HCV reports of oil-palm plantation management units (70,314 ha) were analyzed. The findings were used to extrapolate the proportion of HCV areas to the 24 oil-palm concessions (623,228 ha) in the catchment. The findings were used to extrapolate the proportion of HCV areas to the 24 oil-palm concessions (172,281 ha) and 16 forest concessions (450,947 ha) in the catchment.

Figure 1. Potential HCV areas, Pawan watershed



Potential HCV

Identifying potential HCVs at the landscape level supports management at the landscape level. The potential HCVs were defined as remaining primary forest, secondary forest, peat swamp forest, mangrove forest, riparian ecosystems and non-forested areas with a high erosion risk. The latter, mostly areas with steep slopes, require extra care to prevent negative environmental impacts. Through land-cover analysis using GIS and ground-truthing the total areas with potential HCV was estimated to be 980,477 ha, or 69% of the catchment area (Table 2).

Table 2. Potential HCV areas

HCV	Area (ha)	% of total area
Primary forest	223,693	23
Secondary forest	534,694	54
Peat swamp forest	105,469	11
Mangrove forest	3,197	1
Riparian zone	101,235	10
Non-forest area with very high erosion risk	12,189	1
Total	980,477	100

Peat swamp forest is located in the lowland areas. It is mostly composed of forested areas and contains endangered species. The ecosystem still effectively regulates water and prevents fire. Secondary forest is found on gently and steeply sloped terrain in the middle and upper catchment areas. The remaining primary forest area is found in the lower, middle and upper parts of the catchment areas; since access is difficult, logging is not technically or economically feasible. Riparian zones have good vegetation cover and function as ecological corridors that connect HCV areas among upper, middle and lower catchment areas. Non-forested areas with steep slopes have a high risk of erosion. Most of the mangrove forest has been converted into fish ponds.

Actual HCV

The actual HCVs in the landscape consist of protected areas managed by the government and areas managed by private enterprises as part of concessions. The total area of actual HCVs managed by the government is 349,733 ha, or 25% of the catchment area. It includes Gunung Palung National Park, watershed protection forest,[5] peat swamp ecosystem, riparian zone and non-forested areas with a risk high of erosion (Table 3).

Table 3. Existing HCV areas identified and managed by government

HCV area	Area (ha)
National park forest	61,390
Primary forest	22,199
Secondary forest	26,487
Peat swamp ecosystem	12,704
Watershed protection forest	237,519
Primary forest	129,034
Secondary forest	106,377
Non-forest area with very high erosion risk	2,109
Peat swamp ecosystem	28,378
Riparian zone	22,446
Total	349,733

HCVs in private concession areas

A case study was made of seven oil-palm concessions and five forest concessions in the Pawan watershed that had already identified and defined their HCV areas. Table 4 compares the potential and actual HCV areas in both types of management units.

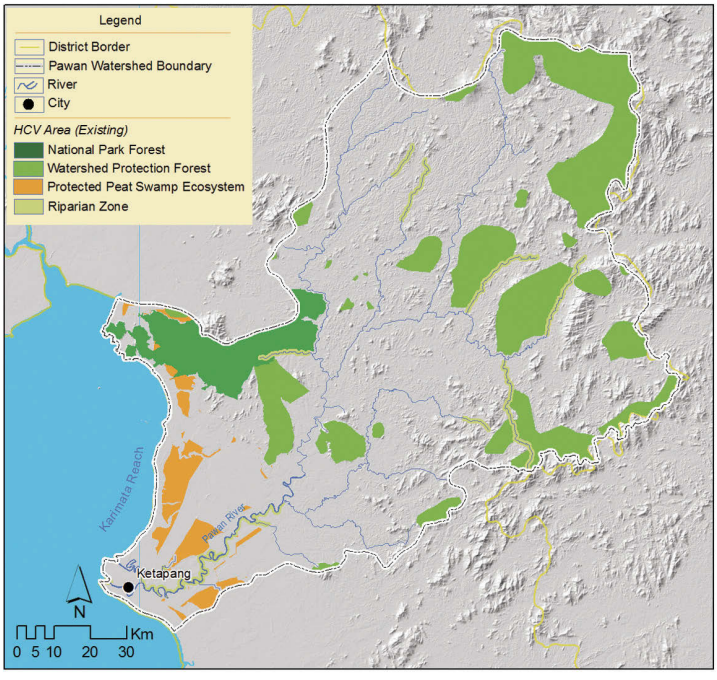
Table 4. Potential and actual HCV areas (ha) in private concession areas

HCV area	Oil-palm plantations		Natural forest concessions	
	potential	actual	potential	actual
Primary forest	0	0	24,876	14,147
Secondary forest	10,150	0	30,465	26,178
Peat swamp ecosystem	6,348	572	0	0
Riparian zone	10,219	1,495	10,581	912
Non-forest area with very high risk of erosion	1,100	0	0	0
Total	27,817	2,067	68,183	41,238

Note: Potential and actual HCV areas as identified and managed by seven oil palm plantations and five natural forest concessions.

Assuming that there are no differences in interpretation between potential and actual HCV areas, and no actual HCV areas have been delineated outside potential HCV areas, actual government-managed HCV areas cover about 36% of the potential HCV area in the total catchment (Figure 2). Identified and managed HCV areas in oil palm plantations and natural forest concessions represent 7% and 60% of the potential HCV areas, respectively. Extrapolating this to the overall concession areas, this (potentially) would add 160,543 ha (5,073 ha in oil palm plantations and 155,470 ha in forest concessions) to actual HCV areas. This would make the total actual HCV 510,276 ha, or 52% of potential HCV areas (36 % of the catchment area).

Figure 2. Actual HCVs managed by government, Pawan watershed



Conclusions

Based on a spatial analysis of remote sensing, supported by ground-truthing, the actual HCV of the study catchment is 52% of the potential HCV. Of all potential HCVs, 64% are under the control of private concessions; 36% are managed by government.

The relatively large gap between actual and potential HCV and the high proportion of potential HCV managed by the private sector is cause for concern. It indicates a high risk of losing HCVs. Ineffective land-use policy is partly caused by the absence of an LCP process prior to the establishment of concession areas.

Determining HCVs is crucial to maintaining life support systems at the landscape level. It is part of a precautionary approach to prevent catastrophes — such as fires, water scarcity and pests — caused by unsustainable natural resource exploitation. Unfortunately, the benefits of the HCV approach are often not perceived by government and concession holders, who tend to have short-term commercial perspectives. HCV areas are often considered a "green" strategy rather than a business consideration. A fundamental shift in the attitude of concession owners is needed so that they see HCV as a source of revenue rather than a cost or a threat to profitability.

The HCV areas within management units should be connected to one another to form conservation corridors. In many cases, the HCV areas are discrete small islands in a sea of intensive production. This reduces the effectiveness of HCV to contribute to landscape-level conservation initiatives. The government should ensure the connectivity of HCV areas among concession boundary areas. It can do this by developing LCP as the basis for delineating natural corridors at a landscape level before issuing concession areas permits.

Endnotes

1. These are the ten FSC principles: 1: Compliance with laws and FSC Principles; 2: Tenure and use rights and responsibilities; 3: Indigenous peoples' rights; 4: Community relations and worker's rights; 5: Benefits from the forest; 6: Environmental impact; 7: Management plan; 8: Monitoring and assessment; 9: Maintenance of high conservation value forests; and 10: Plantations.
2. See www.hcvnetwork.org/about-hcvf.
3. These are known as *Hak Pengusahaan Hutan or* HPH in the Indonesian concession system.
4. HCV actual equals HCV at the present (existing) condition and includes both those areas that are managed by government (in the form of conservation/protected areas) and by the private sector (HCV areas).
5. These are known as *Hutan Lindung* in Indonesia.

Reference

Consortium for Revision of the HCV toolkit for Indonesia. 2008. *Guidelines for the identification of high conservation values in Indonesia (HCV Toolkit Indonesia)*. Consortium for Revision of the HCV toolkit for Indonesia.