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Missing the forest for the data?

Conflicting valuations of the forest and cultivable lands.

*Emmanuelle Cheyns[1,a], Laura Silva-Castañeda[2,3] *, Pierre-Marie Aubert[4]*

1: Cirad-UMR MOISA, Univ Montpellier, Cirad, Inra, Montpellier Supagro, Ciheam.
TA C-99/15, 73 rue Jean-François Breton, 34398 Montpellier Cedex 5, France
emmanuelle.cheyns@cirad.fr

2: Université Catholique de Louvain
3: Université Paris-Est, LISIS, IFRIS, F 77454 Marne-La-Vallée.
laurasilvacasta@gmail.com

4: Institut du développement durable et des relations internationales (Iddri).
27 rue Saint Guillaume - 75337 Paris Cedex 07
pierremarie.aubert@iddri.org

a: corresponding author, emmanuelle.cheyns@cirad.fr
* the first two authors equally contributed.

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Abstract

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Keywords

Environmental valuation; pragmatic sociology; forest conservation; oil palm; High Carbon Stock; local communities.

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- HCS reframes environmental protection as an optimisation problem.
- Focusing on conflicting land uses, HCS obfuscates conflicting forms of valuations of the environment.
- HCS set-asides rural dwellers' forms of valuation and their local ecologies.

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Introduction

Concerned with rapid tropical deforestation caused by the expansion of oil palm plantations, in 2010, Greenpeace launched a campaign targeting the key European customers of a major palm oil producer - Golden Agri Resources (GAR). A few months later, GAR announced its Forest Conservation Policy, which included a zero-deforestation pledge. Its implementation raised a simple, albeit tricky, question: what is a forest? To resolve this question, GAR – together with Greenpeace and a consultancy firm called The Forest Trust (TFT) – developed a methodology for forest classification called the High Carbon Stock (HCS) approach. Classifying vegetation primarily by the level of carbon sequestration, this method identifies which forest areas to protect from agricultural conversion.

The HCS tool has been gaining attention beyond the palm oil sector, namely among companies facing deforestation issues in pulp and paper, soybean and cocoa. The HCS steering group is lobbying to include this approach in several standards, such as those of the Roundtable on Sustainable Palm Oil (RSPO), the Roundtable on Responsible Soy (RTRS), the Forest Stewardship Council (FSC) and REDD+. In a recent resolution, the European Parliament named it a key methodology to combat the tropical deforestation caused by oil palm expansion[1]; and several countries are considering it as part of implementing the Amsterdam declaration, signed by six European countries in support of private commitments to eliminating deforestation from their supply chains.

HCS advocates present this method as "providing practical, scientifically robust and cost-effective guidance for distinguishing and then protecting viable forest areas" (Rosoman *et al.*, 2017, Module 1 p. 5). Yet, it is far from being a neutral data collection tool, as highlighted by

[1] European Parliament resolution of 4 April 2017 on palm oil and deforestation of rainforests (2016/2222(INI)).

the criticism emerging from its pilot implementations in Indonesia and Liberia. Social NGOs disapproved of how certain lands being used by local populations, such as early fallow lands, were designated "degraded" on which oil palm "could be developed" or, in the case of older fallow lands, classified as HCS forest to be protected. They argued that HCS categories were imposed on people, ignoring their systems of land use, land ownership and land classification; and, in turn, affecting their livelihoods (Colchester *et al.*, 2014; Colchester & Anderson, 2015).

Environmental NGOs, palm oil companies, local populations and social NGOs have different views on how to define, identify and value forests and cultivable lands. How have HCS advocates attempted to create commonality and deal with differences? How did they integrate locals' concerns, interests and views? Although initially designed without the participation of social NGOs and local communities, the HCS tool was progressively adapted in response to the voiced criticisms. In this article we explore the ways in which HCS advocates tried to integrate diverse types of knowledge and forms of valuation. For such an analysis, we turn to French pragmatic sociology and the notion of different "grammars of commonality in the plural" (Thévenot, 2015). We argue that these actors have privileged a liberal grammar, through which integration of differences occurs via negotiations, thereby dismissing some significant forms of valuation used by rural dwellers.

1. Literature review and analytical framework

1.1. STS approaches to conflicting categories of environmental valuation

Science and Technology Studies (STS) scholars have long scrutinised the ways in which scientific definitions, methodologies or categories are used in the formulation and implementation of public policies at the expense of alternative bodies of knowledge (e.g. Rajão, 2013). In the sub-field of environmental policies, STS have also been mobilised by a large body of work, frequently labelled as critical political ecology, which "builds on

advances in STS by seeking to indicate how supposedly apolitical scientific laws in fact reflect historic political and social relations" (Forsyth, 2001).

Scholars in this tradition have paid special attention to deforestation issues in different settings, such as in Sub-Saharan Africa (Fairhead & Leach, 1996; Robbins, 2003), Northern Africa (Davis, 2005), South-East Asia (Robbins, 2001; Forsyth & Walker, 2008) or the Amazon (Rajão & Vurdubakis, 2013). With respect to our topic, this literature yields two main results. First, it reveals the two key processes through which scientific explanations and categories are preferred to local ones in designing and implementing environmental policies. The first, well-illustrated by Rajao's Amazonian analysis (2013), points to the fact that scientific representations better match policy-makers' expectations. They can render an environmental problem *visible* – supposedly better than local accounts; they are *comprehensive* in that they are said to represent the whole situation; and they allow for *causality analysis*, showing deterministic links between a given factor and the environmental problem under scrutiny. Another process is detailed in Scott's "Seeing like a State" (1998) and refers to the concept of *legibility*: that is, the fact that to govern natural things and people's behaviours, rulers need to render them legible, i.e. create a simple representation which is not only graspable, but meanwhile alters the objects it so simply describes. On the contrary, local representations and categories are often considered too complex to allow for any legibility or control from afar.

The second result relates to the consequences such domination of scientific discourse has had, not only for social justice, but also for environmental degradation. This is the case in Morocco and Northern Africa where, as demonstrated by Davis (2005), false assumptions regarding forests have led to land dispossession and useless reforestation programmes. This is also true in the forest-savanna transition zone of Guinea, where Fairhead and Leach (1996) showed that

though local communities had long been blamed for the deforestation seen this last century, nearly three-quarters of the villages surveyed had instead contributed to reforesting the area.

While these studies furthered the understanding of how scientific explanations tend to dominate and delegitimise local ones, they have revealed little in terms of how practitioners seek to integrate those diverse types of knowledge and the consequence of such compositions. Yet, one specificity of the HCS approach claimed by its supporters is that it relies on the combination of conservation sciences and participatory mapping (open to local knowledge) to define a land use plan. We therefore need to understand how actors having different modes of valuation for forests and cultivated lands have endeavoured to create commonality and deal with differences.

1.2. Integrating conflicting modes of valuation: French pragmatic sociology

To grapple with these issues, we turn to French pragmatic sociology. Thévenot, one of its founders, conceptualised different *grammars of commonality* to highlight the plural ways in which people create commonality and deal with differences, especially through two basic operations: communicating and integrating differences[2]. How do people share a concern with others? And how do they arrange differing voices to form a whole (which can be referred to as commonality)? This author identifies three different grammars of commonality: the grammar of *orders of worth*; the *liberal grammar of individuals*; and the grammar of *common affinities to common places* (Thévenot, 2014, 2015).

In the orders of worth grammar, communicating implies linking one's concerns with a specification of the common good. Difference is integrated via compromise between a plurality of justice principles. Formalizing a sense of what is just and unjust in practice, these

[2] Which refers to "*composing difference*" in the archaic sense of settling a disagreement that results in the composition of a pluralist common good for the community (Thévenot, 2014).

plural justice principles characterise the common good and rely on different modes of valuation. Boltanksi and Thévenot (2006 [1991]) identified six specific views of the common good with corresponding legitimate valuation modes: *market competition, industrial efficiency, fame, civic solidarity, domestic trust, and inspiration*. This framework implies that plural legitimate logics of valuation can be used beyond a strictly quantified definition of value (Centemeri, 2015). For example, nature can be publicly valued as patrimony (or heritage) in a domestic order, as an expression of wilderness (inspiration order), as a commodity (market order), or as a quantity of carbon (industrial/green order). In practice, the prevalence of some forms of valuation over other forms leads to invisibility problems when alternative valuations are neither revealed nor debated.

Turning now to another legitimate grammar of commonality, the liberal grammar involves a composition that comes about through negotiation. As conceptualised by Thévenot (2006, 2007), in this grammar, stakeholders seek to find a balance of interests; they are expected to communicate their concerns as a choice for options, framed as interests. Stakeholders express a functional and utility relationship with the environment, thereby attributing value depending on what is useful for the individual (Centemeri, 2015, p. 311).

Finally, the grammar of common affinities is based on the attachments, concerns and feelings that people directly invest in common places, making it more hospitable to intimate and familiar ways of relating to the environment. From this perspective, value hinges on it being a dwelled-in environment; it is a place where a person feels “at ease” and where memories are deposited. Through familiarization, a person forges intimate bonds with non-humans (Centemeri, 2015, p. 312). These attachments are valuable in a way that excludes commensuration, as “commensuration would imply considering these persons, objects and other entities of the environment as separate and equivalent to others” (Centemeri, 2015, p. 314).

This analytical framework is useful for understanding the power inequalities and *(in)visibility* issues arising from the imposition of specific valuation languages (Centemeri, 2015). This paper highlights two types of oppression: the first being a consequence of *formats of information*[3] (Thévenot, 1997) used for the general valuation, such as a carbon proxy and Geographic Information System (GIS) technologies; the second resulting from the prevalence of a specific grammar of commonality to deal with differences. For the latter, we will highlight the oppressions resulting from a favoured *liberal grammar*, where composition comes about through a negotiation between different land functions or *utilities*, over other forms of valuation relying on people's *attachments* and plural *orders of worth*.

2. The palm oil controversy and the HCS methodology

The oil palm expansion that primarily occurred in Malaysia and Indonesia (nearly 85 % of the world production) has depleted tropical forests (for Indonesia, Tsujino *et al.*, 2016) and severely impacted local populations (Colchester & Chao, 2013). Since the late 1990s and early 2000s, several civil society organisations have raised socio-environmental concerns over the agro-industrial development pathway. The RSPO emerged in 2004 as a multi-stakeholder initiative to create and implement a sustainability standard for palm oil (for a detailed account, see Nikoloyuk *et al.*, 2010; Cheyns 2011; Silva-Castañeda & Trussart, 2016). Despite – or because of – its success among major industrial actors, the standard has been criticised for not being able to properly protect tropical forests and local populations (e.g. Laurance *et al.*, 2010; Silva-Castañeda, 2012; Greenpeace, 2013; Ruysschaert & Salles, 2014; Amnesty International, 2016).

[3] Various valued ways of relating to the environment, ranging from very formalised knowledge to perceptual markers found in familiar surroundings (Thévenot, 1997).

Greenpeace has been especially critical of RSPO companies' poor environmental performance. In 2007, it released a report denouncing the impact of large-scale oil palm plantations on climate change which explicitly targeted the Singaporean Sinar Mas group, the owner of GAR (Greenpeace, 2007). The industry's responses falling short of Greenpeace's expectations, the NGO launched an aggressive campaign targeting GAR's major customers (Unilever, Procter & Gambler and Nestlé) three years later. A 2010 spot parodying Kit&Kat had tremendous impact on social networks and exerted vast public pressure on Nestlé. The day after its launch, Nestlé publicly announced that it would stop sourcing palm oil from GAR and two months later released new "Responsible Sourcing Guidelines". Shortly after, GAR accepted to enter into negotiations with Greenpeace to define a forest conservation policy based on an agreed-upon definition of a forest, that would come to be called a High Carbon Stock forest (for a detailed account, see Aubert *et al.*, 2016).

Mediating this initial negotiation between Greenpeace and GAR was the TFT, a Swiss not-for-profit that works with companies to improve their environmental and social performances in tropical forest-related sectors. Since, the HCS approach has evolved to progressively involve more actors[4]. It is possible to distinguish between three overlapping phases of negotiation:

In the first phase (2010-2013), Greenpeace, GAR and TFT developed the fundamentals of the methodology to define a forest and tested it on two concessions: PT Kartika Prima Cipta (PT KPC), a subsidiary of GAR in Indonesia (GAR & SMART, 2012); and Global Veroleum Liberia (GVL) in Liberia, a company in which GAR is the main investor.

[4] In May 2017, the HCS approach steering group was composed of 23 members, including 7 plantation companies, 8 international NGOs (1 focusing on social issues, FPP), 3 commodity users, and 5 technical support organizations. See: http://highcarbonstock.org

192 While the first did not include any social issues, the second phase (2013-2015) did. In
193 response to critical social NGOs' reports, the focus was on how to integrate local populations'
194 concerns into the HCS methodology. Forest People Program (FFP), an international NGO
195 founded in the UK supporting the rights of those living in and depending on forests, played a
196 central role. It published, together with an Indonesian NGO, the reports that would trigger a
197 discussion with HCS advocates and was invited to contribute to the HCS approach. This
198 process resulted in a first standardised methodology, presented in a toolkit (version 1.0)
199 released in 2015 (HCS Approach Steering Group, 2015).

200 The third phase started in 2014, when the HCS methodology was challenged by a rival
201 initiative ("Sustainable Palm Oil Manifesto", signed by five other major palm oil companies).
202 Attempts of convergence between the two approaches and continuing collaboration with
203 social NGOs resulted in version 2.0 of the HCS toolkit (Rosoman *et al.*, 2017).

204 This article focuses on how social issues have been addressed in the HCS approach
205 throughout the whole process. The research method is based on two main sources of data: 13
206 semi-structured interviews carried out between 2013 and 2016 with representatives[5] from
207 Greenpeace (4 interviews), TFT (4), GVL (2), GAR (2) and FPP (1); and secondary sources,
208 including the analysis of the different versions of the HCS toolkit, companies' documents and
209 NGO reports. Among the latter, two reports stood out for specifically assessing the HCS
210 methodology from a social perspective. The first, published in 2014 by FPP and TuK
211 Indonesia, critically addresses the HCS methodology's impact during its pilot implementation
212 in PT-KPC, in West Kalimantan (Colchester *et al.*, 2014). The other, published by FPP, is a
213 consulting study compiling local and international organizations' views regarding how the
214 application of the HCS concept has or has not accommodated their rights and livelihoods

[5] CEOs, directors, GIS managers, project managers, forest engineers, campaigners.

(Colchester & Anderson, 2015). We examined the forms of valuation proposed in the HCS methodology from a temporal and dynamic perspective, that is to say, taking into account the various reality tests faced by the parties as well as the alternative valuation forms raised by critical voices.

3. Towards a practical definition of the forest: an agreement between Greenpeace, TFT and GAR

This section presents the agreed-upon "forest" definition and the methodology developed to operationalise it.

3.1. A first "forest" definition for implementing a zero-deforestation policy

There are many ways to define or characterise what is and what is not a forest. More than one hundred definitions co-exist today (Vidal *et al.*, 2008). While the FAO provides a definition with the intention that it be widely – if not universally – used to facilitate cross-comparison and international statistics, many countries or organizations have their own due to their histories and specificities. During a meeting in Jakarta in 2010, representatives from GAR, Greenpeace and TFT reviewed several indicators commonly used to define or characterise a forest but found none of them satisfactory. They had three main concerns over the definition's use: that it be easy and inexpensive for operational managers and enterprises (e.g. less expensive than biodiversity studies); that it be universal, irrespective of the geographical context; and that it be "viable", ecologically and economically speaking (Aubert *et al.*, 2016).

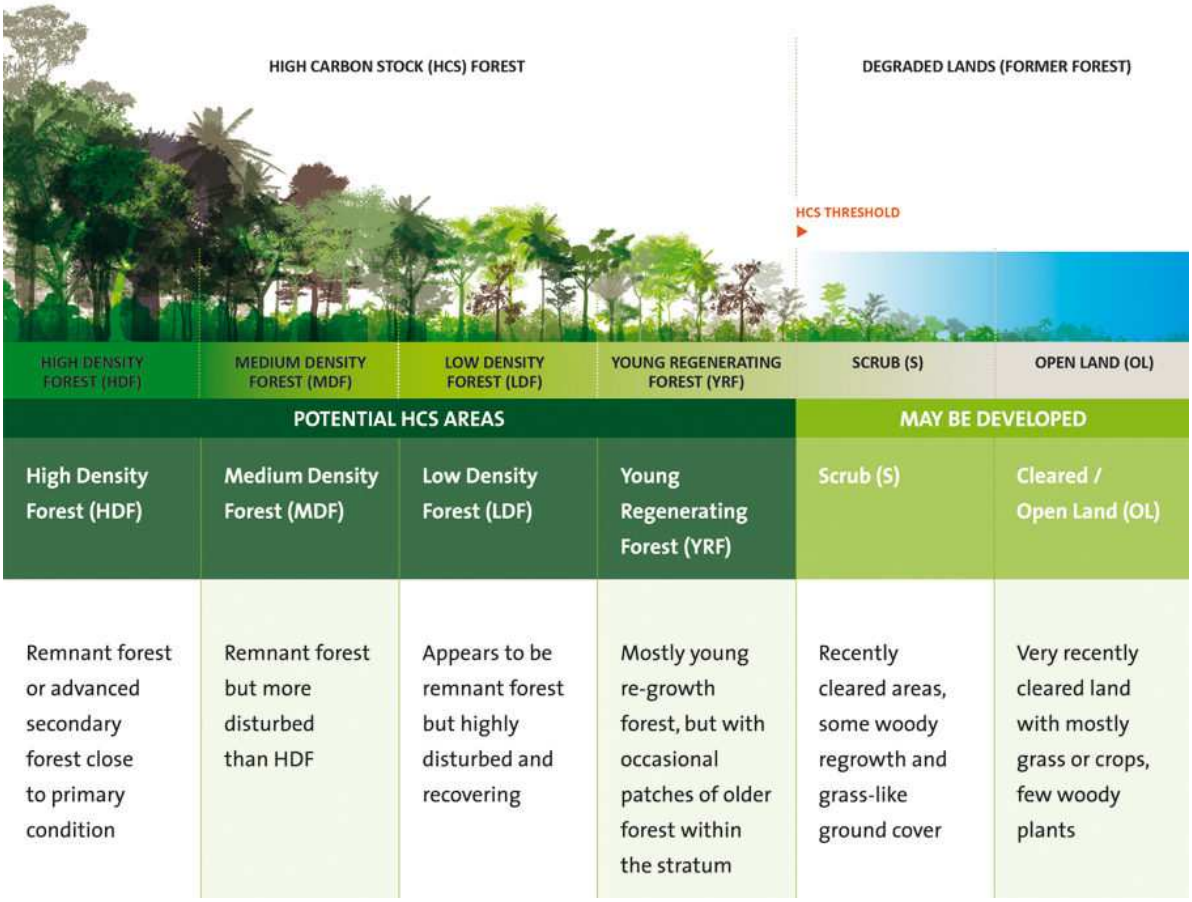
To this end, they identified a single indicator: the above-ground biomass (AGB) of a forest stand, estimated in tons of carbon per hectare (t C/ha) and used as a first proxy of a forest's ecological interest. The threshold of 35 t C/ha was proposed at this time to differentiate forested and non-forested areas, one of the main reasons being that it could fit to a "carbon

neutral" approach which was developing at this time in the palm oil sector. Indeed, 35 t C/ha is the AGB of a mature oil palm plantation, meaning that if only vegetation areas with less than 35 t C/ha are converted to oil palm, it will not emit more greenhouse gases. The next question was then how to operationalise such a forest definition?

3.2. A two-step methodology: from the vegetation map to the operational map

The three main actors agreed on a two-step methodology, starting with mapping the vegetation. This first step contains several sub-steps. Firstly, a preliminary *vegetation map* is produced using satellite imagery and an automatic stratification process. Secondly, a forest inventory is carried out on sampled patches to confirm or modify the preliminary map – a process called groundtruthing. The resulting vegetation map distinguishes six forest strata, from "cleared/open land" to "high density forest". The 35 t C/ha threshold falls between two intermediate categories, "young regenerating forest" and "scrub", and distinguishes between "degraded land" – deemed former forest – and "high carbon stock forest" (Figure 1).

Figure 1: the HCS Forest Stratification (highcarbonstock.org)



In the second step, the vegetation map is used to draw an *operational map*, which clearly distinguishes "forest areas" to be protected, from "degraded lands" that may be converted to plantations through a *decision tree* process. Relying on conservation science (as put forward by its advocates), this decision tree consists of a series of tests successively applied to all forest *patches* whose ABG is above the 35 t C/ha threshold to clarify their final status: to conserve or develop. For this process, the patches classified as HCS forest are assessed according to four criteria: size; connectivity to ecologically-interesting areas; risk of degradation; and biodiversity level.

Despite the whole process being highly formalised, its implementation also depends on an "operationality" imperative, which is valued by companies as the "efficient" management: "First and foremost we have to consider blocks of land that are sufficiently large to justify

operational efficiency, and coherent operational management. […]. The HCS in these areas makes a very fragmented operating environment, a very unprofessional operating environment." (Interview, GVL manager, 2013).

In that sense, GAR mentioned the need to check whether the remaining HCS areas fundamentally compromise the plantation operation and, if so, consider minor adjustments to small HCS/non-HCS areas, including exchange arrangements.

In version 2.0 of the toolkit, this process has been complexified in 14 steps, in particular to address the mentioned operationality imperative. Patches are given a priority level by their size. *Medium and Low Priority Patches* are then assessed according to the other criteria (such as connectivity or degradation risk) and they may change categories in the final stages, when "viability and optimisation" aspects are considered. Thus, in the process, some are provisionally marked for "give and take". In the last steps, which aim at creating an Integrated Conservation and Land Use Plan (ICLUP), optimisation of conservation, social and economic outcomes are addressed through the give and take process. The objective of the latter is to: "exchange Low Priority Patches (LPP) and Medium Priority Patches (MPP) […], where areas in-filled and restored for conservation (give) exceed the LPP and MPP and 'fingers' are moved to development (take)" (Rosoman *et al.*, 2017, module 5, p. 22).

Thus, the methodology is based on a quantitative and highly technical metrology (tons of carbon per ha and GIS technology) hinging on a claim of neutrality, as well as on a negotiation as part of a give and take process. Overall, the entirety lies on the assumption that different pieces of land are substitutable if they share similar properties from a conservation science perspective.

4. Towards an integrated land use plan: the role of social NGOs

As described above, the HCS methodology relies on complex operations ranging from image analysis to field surveys. Besides the problems surrounding the availability of resources (technical expertise, cost of satellite imagery, etc.) and the (im)partiality of data selection and characterization, the issue of conflicting knowledge formats is particularly critical when mapping the diversity of land uses. Indeed, far from being a neutral exercise, the vegetation map risks rendering some land uses invisible, even when the necessary resources and impartiality are guaranteed. In this section, we show the role of social NGOs in shedding light on locals' views and, subsequently, in modifying the HCS methodology to render a plurality of land uses visible.

In their reports, FPP and TuK Indonesia point out the risks associated with the use of satellite imagery, as this Indonesian villager exemplifies: "We should make it clear that there are communities here. We people who belong to the communities are not seen by the satellites" (Seberuang village secretary quoted in Colchester and Anderson, 2015).

Such geographic information technology raises the "troubling question of whether remote sensing "sees" the land uses of particular social groups and not others" (Walker & Peters, 2007). In Kalimantan, where the HCS was first implemented, several land uses deemed particularly important by residents remained undetected by satellites: fallow lands used in shifting agriculture, agro-forestry and uncultivated lands (e.g. sacred sites). The traditional Dayak agriculture includes both the dry (*ladang*) and wet shifting cultivation of rice (Penot, 2003), meaning that some lands have successional vegetation reverting to forest and/or to be used again for ladang. It also involves mixed gardens, which are complex agro-forests composed of fruit trees and high diversity timber trees (Penot, 2003; Wulan *et al.*, 2008). The invisibility of swiddening is a general problem, as data on swidden land and populations are

lacking (Walker & Peters, 2007). As noted in the NGO report (Colchester *et al.,* 2014), if family agriculture fallows and reserves were measured, their size would be much higher than that currently under cultivation.

In theory, the groundtruthing phase of the HCS methodology could resolve several difficulties raised by satellite imagery by permitting a more careful observation *in situ*. Yet, an outsider might not recognise fallow land or sacred areas. As one community leader explains:

> Sometimes the boundary is less than 2 km away, and we have fields way beyond that point, you can see the fallows that are out there [...] some of those fields have been left between 6 and 10 years and may now look like forest, but that is our fallow (Villager from Moungue quoted in Colchester & Anderson, 2015).

This difficulty points to the problem of specific forms of information that those unfamiliar with the place – such as those from companies, consultancy firms or environmental NGOs – may not perceive. For local dwellers, familiar markers (Thévenot, 2006) - natural (rivers, trees, etc.) or ancestral (graves, etc.) - are valued as valid pieces of information. While these forms of information are widely shared by residents, it is not easily so with non-residents, who have no familiar links nor attachments (Silva-Castañeda, 2012).

Different information formats arising from both satellite imagery and groundtruthing result in conflicting categorizations with local communities, as seen in this Indonesian villager's complaints:

> We feel that old scrub is really our land and belongs to our ancestors: it is not HCS. All these areas called HCS1, HCS2, … why are they categorised as this? They are just old regrowth and are also for our future. […] (Looking at map) That land they put on the map as HCS1; it is our land for future generations. There is no HCS here. The company cannot prevent us from cultivating these areas because this is our land. (Villager from Menapar quoted in Colchester *et al.*, 2014).

Recognizing the initial lack of consideration for local communities, HCS advocates adapted their methodology. Alongside the recognition of the important principle of Free, Prior and Informed Consent (FPIC) pushed by social NGOs, they granted them the possibility of creating their own map through a participatory mapping process to be superimposed on the vegetation map. This would allow local communities to value their land uses and their familiar markers by translating them into geographic coordinates. Yet, the decision to not include local dwellers in the creation of the vegetation map on the basis of it being "too technical" is noteworthy:

> For the actual image analysis and the forest inventory, really that work is done by very technical people and then, socializing the results and talking about 'Ok, this is what we found, here are the forests, here are the buffer zones that we need'. For that you will then need a discussion, but for the actual work of the HCS itself, I don't think local people would be super involved in that, I can't think of any way how. They just need to know what is going on (interview, TFT, HCS Project manager, 2015).

Thus, a clear separation is drawn between the knowledge formats. On the one hand, the technical expertise on vegetation analysis remains in the realm of forestry engineers and company managers. On the other hand, local communities are supposed to create their map based on their own knowledge of the locale. The objective is not to integrate different formats, although experiments integrating traditional ecological knowledge and remote sensing may provide alternative insights into vegetation classifications and land cover analysis (see for instance Naidoo and Hill, 2006). As described above, HCS advocates aimed at a "pragmatic" ("easy to use") and standardised tool where vegetation categories would have a universal value, excluding *a priori* the complex integration of local knowledge. Nonetheless, the HCS protocol provides, in theory, symmetry between knowledge formats: the superposition of

363 vegetation and participatory maps aims to make them equivalent. However, once this is done,
364 the different parties face a huge difficulty: what to do with overlapping uses?

365 5. Integrating differences: consequences of a liberal grammar for the valuation
366 of forests and cultivable lands

367 To overcome conflicting land uses, the HCS methodology foresees a specific mode of
368 composition: a negotiation process. Regarding the pilot implementation in Liberia, a TFT
369 forest engineer explained:

> 370 Participatory mapping is one step. Next, there are table discussions and community consent […]
> 371 You superpose the maps and if you have overlaps between the community zones and the forest
> 372 zones, then you enter into negotiation with them, especially if these forests have high
> 373 conservation priority […] This could pose some problems. […] Thus, the FPIC process becomes
> 374 very important, and it is necessary to really be able to find a balance between what is the land
> 375 for the community and the land for the enterprise, and the forest to conserve (Interview, TFT
> 376 forest engineer working in GVL plantation, 2013).

377 Thus, the parties may be asked to enter negotiation to reach a *balance of interests and needs*.
378 As stipulated in the toolkit (version 2.0), community lands "will be enclaved and excluded
379 from being categorised as HCS forest and from plantation development, unless they are
380 *negotiated* to have a different status as part of the "give and take" process" (see Step 13 of the
381 Decision Tree). Thus, the toolkit recalls the need for local populations' FPIC, a principle
382 according to which a community has the right to give or withhold[6] its consent to proposed
383 development that may affect the lands it legally or customarily owns, occupies or uses. At the

[6] In theory, "where communities deny consent, the areas should be excluded from a company's plantation development or conservation plans" (Version 2.0). We will see however that, in practice, it is difficult for local communities to assert their rights and they are more often asked to negotiate.

same time, however, it stipulates that if communities are willing to compose with other stakeholders, this composition will be part of a process of give and take, lands being *negotiated* to reach a land use deal. In this process, land is valued for its function (or utility). In this section, we explore three major issues raised by such a mode of composition (Table 1).

5.1. A negotiation regime: transforming personal attachments into interests

The negotiation process guides local communities towards a particular format, where they are expected to transform their *attachments* to the place and their familiar experience into *interests* and *calculated needs*, which are more suited for trade-offs with other stakeholder interests (Table 1, column 3).

In order to participate in an "integrated land use planning", communities are expected to engage with the future in a functional engagement (Thévenot, 2006). Local communities are concerned for their future generations and have experience in evaluating whether they can lease or rent some of their lands to palm oil concessions. However, "to draw the right information" – as one Greenpeace campaigner put it – and engage in negotiations with palm oil developers and HCS experts, they may be required to do this in a very specific format that integrates formal calculations of areas and macro variables (demography, markets, etc.) (Colchester & Anderson, 2015). Yet, as explained by this campaigner, this task is not easy: "it's not by asking different people in the village that you'll have a good spatial representation of what they need. (…) it's necessary to anticipate the population's increase, it's really complex. For me, that is the most complicated" (Interview, Greenpeace campaigner, August 2013).

This expectation supposes a complex transformation of local practices, experience and "intimate knowledge of the locale" (Colchester & Anderson, 2015) into a more industrial form of calculation (Boltanski & Thévenot, 2006 [1991]) based on technical and quantitative

indicators. The two FPP reports underline the great difficulty of this operation, which implies a transformation of valuation modes. In workshops led by FPP to test the process of future needs calculation, the communities explained their own systems of land use planning, what was valued in their customary lands, and how they made estimates of their land needs. For example, they reported that "Dayak do not measure the extent of their farms according to their area, but rather on the basis of their yield and the amount of grain needed to sow them" (Colchester & Anderson, 2015, p. 33). In this case, the property is not a fixed area and can vary. They made educated guesses at the extent of their farmlands, with complex calculations based on estimations of yearly areas of extension for shifting cultivation per average family, duration of the cultivations and duration of regeneration, depending on the soil quality and on the crops (Colchester *et al.*, 2014). At the time of integrating the future needs, FPP concluded that "estimating the extent to which people will stay on the land and making allowances for future choices of crops and livelihoods and the vagaries of the market, renders all such plans even more approximate" (Colchester & Anderson, 2015).

Alongside these transformations into calculated needs, the negotiation process supposes that communities would have to transform their attachments into *interests*. The interests to be negotiated are presented as "options" to the parties. These become substitutable, either because they are framed as an economic metric or because they are seen through their function. This is illustrated by one Greenpeace representative, who during the pilot implementation foresaw a need to formalise economic incentives for the communities and to substitute wild meat proteins to facilitate the negotiation of land uses.

> It's all about getting community buy-in for the concept and the approach. It's not going to be easy, I mean the hunting issue is huge, it's a very difficult issue. [...] In Indonesia, they do get around that a little bit by, for example, starting these buffalo farming schemes together with the palm oil. […] That's some of what's

being done in Indonesia anyway, to substitute protein to wean people off wild meat sources (Interview, Greenpeace International, 2013).

Similarly, the toolkit version 2.0 introduces the notion of "alternative livelihoods" (module 2, p. 14). For areas under cycles of rotational farming, forest fallows and where communities expect to make their living by farming, ground surveys that "evaluate total area and the land needed to maintain current communities' livelihoods" may "be considered in relation to incentives for alternatives livelihoods and farming productivity gains (e.g. maintaining or increasing production while using less land)" (Idem). The latter corresponds to a common vision among the palm oil industry actors that communities' shifting cultivation and/or settlement mobility produce "idle lands", and that these communities could relinquish (or exchange) part of these lands if they changed their "ways of living" and farming systems.

A "benefits and incentives package" was also introduced in the toolkit (2.0, module 5) to "address conditions regarding substitution and compensation measures for foregoing uses and benefits" (p. 41). Most of them are supposed to transform personal attachments to places and ways of living into an economic metric (e.g. employment in plantations, benefit sharing projects, monetary compensations for relinquished lands, direct payments for forest conservation as REDD+) and to reduce the land properties to its quantitative dimension (extent of areas) through a functional engagement appropriate for land substitutions (accepting an "alternative land of equivalent extent", quoted from interviews in Colchester and Anderson, 2015).[7]

Thus, whereas the FPIC module of the toolkit recalls that "a landscape is not only important for community members in economic terms: it is invested with memories […] and underpins

[7] It is to be noticed however that securing local communities' tenure rights (including on HCS areas), an option that respects the dwellers' place-based attachments, can be included in the negotiated "incentive package".

these people' very identities" (Rosoman *et al.*, 2017, module 2, p. 5) [8], the methodology, through negotiation, favours a process that potentially diminishes these important existential bases of human lives by forcing the "interest interpretation".

5.2. A negotiation regime: power imbalances

Framing composition as a negotiation also implies inserting hope into a process that involves parties with unequal resources. The FPIC principles aim at guaranteeing that, despite power imbalances, these negotiations meet several minimal conditions, such as that of a free and informed choice as opposed to an imposition by force. The liberal notion of choice, however, underestimates the constraints faced by rural people for whom the array of options is extremely reduced (Li, 2010). As such, in a situation where few alternatives exist, they might accept changes in their land uses in hope of exiting poverty. It also underestimates the huge power imbalance that characterises relationships between palm oil companies and local populations, as well as the broader political economy in which those relationships are embedded.

In a report targeting GVL, the human rights NGO Global Witness (Global Witness, 2015) denounced how the company had expanded its oil palm plantations in south eastern Liberia. This NGO contends that GVL significantly expanded its operations in this area during the 2014 Ebola crisis, when the risk of contagion forced the NGOs supporting local communities to stay at home. This report's authors argue that the signatories of the multiple "Memoranda of Understanding" signed at this time lacked information when they decided to surrender their lands. As they put it, "[the] 'choice' includes perverse incentives for people to sell their land and work the plantations as a GVL employee, or receive nothing and risk losing their land anyway" (Global Witness, 2015, 6). The report also denounces the climate of fear and

[8] It is noticeable that "section A" of module 2 was penned by FPP.

477 intimidation created by collusion between the company and government officials. These land
478 deals occurred after the departure of TFT, which had assisted the company in formalizing its
479 land acquisition procedure. As noted by one TFT employee:

> 480 All the agreements which have been signed since we left […] I don't know all the details but
> 481 actually, signing so much land during ebola, it does not seem super clean […] I don't know
> 482 whether the FPIC process had been the one defined with them. It's always in these types of
> 483 situations that you have enterprises that transform, change, up until the moment that suits them.
> 484 And then, if that suits them more, they will adapt their process so that it suits them a little
> 485 more… (Interview, TFT forest engineer, 2015).

486 Hence, the company may only comply with the guidelines up to a certain point. Thus, GVL,
487 even though it had been assisted by TFT and had carried out the HCS assessment, was highly
488 criticised for not complying with FPIC principles.

489 The case of PT KPC in Kalimantan also reveals the many obstacles to a FPIC process. As
490 explained above, a preliminary step before entering negotiation is the participatory mapping
491 done by local communities. In PT KPC, this proved extremely difficult: the company initially
492 omitted it, but then, recognizing the importance of such an exercise, TFT was tasked with
493 accompanying local communities in this process, only to be blocked by the latter. As
494 explained by one FPP representative:

> 495 TFT agreed that, indeed, participatory mapping was required to make sense of where the
> 496 communities and their rights are, etc., and livelihoods. So then they very, very. slowly started
> 497 the process, and the first obstacle they came up against was that the community didn't trust
> 498 them, and the second obstacle they came up with was that some of the communities didn't want
> 499 to be mapped because they didn't want to be in the concession and they felt that, by being
> 500 mapped, they would be somehow included. And then, the third obstacle they came up against
> 501 was that the government didn't want the mapping done because they had a different idea about

> what the rights of the communities are in the landscape. And they didn't like – they didn't really approve of communities insisting on land rights (interview, FPP representative, 2016).

As explained in this excerpt, governmental officials also blocked participatory mapping efforts and it was only in late 2014 that they carried out a mapping to comply with the new village law. Yet, the mapping done at that time was not considered as really "participative" by the villagers. The concerned concession thus presented a mixed picture: in some villages, administrative boundaries were mapped with governmental officials; in others, with the help of TFT. Yet, in other communities, those that were opposed to the concession, a participatory mapping was finally done, but with the help of independent NGOs and in a process of clearly asserting their land rights. These experiences show that the initial step of participatory mapping is arduous, as the various actors have highly conflictual interests and unequal resources.

Taken together, these cases highlight firstly the companies' capacity to circumvent the rules that they themselves have either defined or at least agreed upon. Secondly, they stress the importance of the larger context in which negotiations take place, where governments often promote a specific view of economic development that implies the implantation of large companies on so-called "idle" or "unused lands", on the one hand, and the delimitation of conservation areas, on the other. In both cases, this context largely determined the negotiations' possible outcomes.

5.3. Composing by referring to plural forms of common good?

We have shown that HCS proponents see the composition with local communities as a negotiation. As developed above, this raises two problems. First, transforming local communities' concerns into interests frames and reduces those concerns. Second, power imbalances may strongly impact negotiation outcomes. In this section, we extend this analysis

526 to highlight another fundamental problem that stems from the visions of common good
527 underpinning the HCS method: the metrics used in the methodology support a specific vision
528 based on *industrial* and *market* orders of worth (Table 1, column 1).

529 Guided by pragmatism (to engage the industry and reduce costs), the advocates agreed on a
530 simplified proxy indicator - the AGB estimated in tons of carbon - and on a decision tree to
531 determine the status of those patches whose AGB is above the HCS threshold. Through this
532 process, the forest patches considered of little ecological interest due to their small size, low
533 connectivity, lack of biodiversity and degradation risk are progressively excluded from
534 conservation (or exchanged in a give-and-take process). Thus, by describing forest as blocks
535 or spatially-distributed patches, it creates a simplified image of the forest (Leach & Scoones,
536 2013), one that fits with an *industrial* conception of nature.

537 In the *industrial* order of worth, valuation relies on the principles of efficiency and
538 productivity. Following that mode of valuation, the HCS methodology views the "good" use
539 of the environment as an optimisation problem (Mahrane, 2015). Building on the idea that
540 "big chunks of forest become the key for both conserving carbon and biodiversity" (Interview,
541 Greenpeace International, June 2013), the toolkit defines the ecological optimisation principle
542 as follows: "conservation area design maximises the area and a conducive shape/connectivity
543 for long-term conservation" (Version 2.0, module 5, p. 20). This vision fits with the economic
544 optimisation principle valued by companies, which requires that a "potential development
545 area is maximised and shape and size of blocks are practical and promote efficient
546 management" (*Idem*). With this common and core interest on optimisation, economic
547 operators and conservationists found negotiation to be a useful tool. The give-and-take
548 approach to land exchanges points toward a common aim: "to increase core size [of forest

patches] […], as well as provide larger and better-configured areas for development" (module 5, p. 32).[9]

This *industrial* order of worth was also easily combined with another, important to companies, the *market* one. Relating the negotiation between Greenpeace and GVL during the pilot implementation, the company said:

> If we have 500 ha blocks that are spread over an area of 10 km2, it's idiotic […] Liberia's only chance to stop slashing and burning or moving to the cities is large-scale agriculture. […] The threat I see to the HCS is that we are not able to find most of the people jobs […] If we are given the opportunity to develop Young Regenerating Forest [which are just above the 35 t threshold], we give guys jobs […] and after they stop hunting illegally and they start working for the concession (Interview, GVL manager, 2013).

This interviewee upholds a specific conception of development, one that is guided by *market* and *industrial* orders of worth. It supports industrial efficiency and company profitability through agricultural specialisation and division of labour (Cheyns *et al.,* 2017).[10] From this perspective, large-scale agriculture is presented as a means of poverty reduction in that it generates work for rural populations. Local peoples' land uses - shifting agriculture and hunting - are, on the contrary, phrased in negative terms as illegal or anti-environmental practices. This issue of development models was at the heart of the criticism that social NGOs levelled at the HCS. Thus, the FPP report's (2015) conclusion starts with the following quote from an Indonesian NGO:

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[9] It is interesting to note that this industrial vision is so strong that social issues are also addressed according to the 'social optimisation' concept. Social optimisation is defined as "sufficient land for use by community and benefits obtained from HCS forest conservation" (Rosoman *et al.*, 2017, module 5, p. 20).

[10] This vision opposes that of local dwellers for whom a plurality of uses prevails and is often incorporated into the same area (multi species "mixed gardens", various uses of forest areas, fallow lands, etc.).

> The HCS system cannot accommodate the rights and livelihoods of local communities and indigenous peoples without first changing the legal framework of plantation governance regime from large-scale, private concessions of land, forest and resource control that have been proven extremely conflictual, and encouraged rampant corruption and abuse of human rights (p. 33).

Valued from a *civic* order of worth, the large-scale concessions model is considered prejudicial, as it undermines local populations' rights and impedes equitable access to natural resources. Control over land and smallholders' independence are major stakes, as expressed by this villager (see also Hanu, 2015):

> We want to work our own lands ourselves. We don't want to work as coolies on our own lands. We want to work our land under our own control. If land is opened up for oil palm, if we agree to allow expansion for oil palms, then there will be nowhere to get good timber for our houses. When we need it, it will be gone (head of a village in Kalimantan quoted in Colchester *et al.*, 2014, p. 23).

This villager recalls the multiple uses dwellers may have of lands and forests. He also questions the benefits of working for the concession, pointing out the abuses to which workers may be subjected, as well as the progressive loss of independence that stems from this economic model.

In its 2015 report based on a large consultation, FPP questions the undue reliance of the HCS tool on concessionaries, arguing that the concession system is inherently conflictual and inequitable, and that alternative production systems should be promoted, such as allocating greater areas to smallholders (Colchester & Anderson, 2015, p. 5). Thus, the issue is not only to guarantee a FPIC process, but more generally to defend alternative visions of *common good.* HCS advocates were not able to integrate this critique, since the HCS approach was primarily designed as a tool for plantation companies based on *industrial* and *market* orders of worth.

6. Conclusion

The HCS method was created to address the problem of concessions' expansion in high biodiversity areas. It was initially a compromise between conservation NGOs and industries: a tool designed to protect so-called viable forest areas, without jeopardizing the concession's efficiency and profitability. Responding to heavy criticism, HCS advocates then tried to accommodate local communities' and social NGOs' concerns by allowing local communities to draw up their own maps and to give (or withhold) consent. However, they privileged a specific mode of composition: the liberal grammar by which composition comes about through negotiation, the objective being to find a balance of interests. In this article, we demonstrated three implications of this approach.

To defend their interests, local dwellers are required to bring their map. Thus, they must transform familiar markers – a format of information dependent on dwelling in the area and mobilizing ancestral and family memories – into geographic coordinates. In the process of mapping, one difficulty is linked to the plurality and high variations of land uses over time, as most clearly illustrated by the practice of shifting cultivation. Thus, measuring not only cultivated land but also fallows and reserves is a complex exercise. Villagers are also supposed to engage with the future in the form of a plan (Thévenot, 1995), that is by specifying clearly their needs and transform them into calculated areas. More generally, they are asked to clearly frame their concerns into interests. Such transformation allows drawing equivalences between various options, following the criteria of economic interest, and suitable for substitution. Potential incentives as compensation for relinquishing rights have been drawn even where local communities may have a long-standing occupation. Thus, the "HCS package" proposed to local dwellers implies a specific mode of environmental valuation, one that excludes personal attachments to the place.

The second issue relates to power imbalances. A liberal grammar of commonality presupposes that individuals make choices between different options. Yet, the HCS implementations endeavoured so far show us that the liberal notion of choice largely underestimates the constraints faced by local people, most notably in a context where national and local governments have defined economic priorities that are unfavourable to them. In the case of PT KPC in Indonesia, the numerous obstacles encountered in the process of participatory mapping show how villagers, companies and public authorities have highly divergent interests and unequal resources. In such a situation, local communities might refuse to enter a so-called participatory process where power imbalances would work against them. Through the example of GVL in Liberia, we also see that, far from the liberal notions of civility and respect, the use of violence or manipulation is plausible. Company collusion with government officials, intimidation or imprisonment are common in land rights and natural resources struggles.

Finally, the *industrial-market* compromise reached by conservation NGOs and companies can hardly accommodate *civic* principles of justice and equity, most notably because a tool designed with the goal of forest preservation and to be used by large-scale plantation companies is *per se* incompatible with a view of the equitable access to land and independence of local peoples and small farmers. Thus, a radical criticism of the HCS is that this tool relies on an inherently problematic concession model (Colchester & Anderson, 2015). Furthermore, the specialisation of labour and land valued in this model contrasts with a perspective of plural uses in a same land area, more common to rural dwellers in Indonesia. With environmental protection framed as a problem of conflicting land uses and of maximising utility for a given quantity of land, the plurality of uses and local ecologies have little chance of being valued. Even if the participatory mapping allowed local communities to make their land uses visible, the second phase of the method - negotiation with a

maximization constraint - renders their integration highly challenging (i.e. into a land use plan). Thus, the HCS is more than a vegetation and land cover data collection tool. Mainly relying on an industrial order of worth and on a liberal grammar, it encapsulates and reinforces a specific vision of the environment and how people should relate to it. As such, it dismisses rural dwellers' existential forms of valuation and civic principles of justice.

Table 1. Grammars of commonality and modes of valuation in HCS

	1. Grammar of plural orders of worth	**2. Liberal grammar of opting individuals**	**3. Grammar of personal affinities to common-places**
Integrating differences	Making a compromise between the plurality of orders of worth	Negotiating	Joining together multiple affinities to common-places
Forms of valuation	Plural orders of worth: market competition, industrial efficiency, civic solidarity, etc.	Individual preferences (interests, opinions) for public options	Personal attachments invested in common-places.
Valued nature	Nature can be valued as a heritage, a price, a quantity of carbon, an expression of wilderness, etc., referring to different orders of worth.	Valued for its functional utility.	Valued as a dwelled-in environment. Ease. Intimate bonds also with non-humans, with memories, etc. Not commensurable.
HCS valuation	Metric elements based on quantity of carbon, GIS (industrial worth). Methodology values efficiency and productivity/ha (market-industrial worth): large scale units, specialization of land and labour. Does not accommodate civic order of worth: independence, equity of access/distribution of resources.	Maximization/optimization of functional utility: "develop or conserve" through negotiation. "Give and take". Transformation of attachments into interests, suited for negotiation and substitution: "alternative livelihoods", "benefit & incentive package", "compensation", "land for land deals", etc.	Not accommodated in the methodology.

Source: Adapted from Thévenot (2014) and Centemeri (2015)

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