REDD+ actor analysis and political mapping: an Indonesian case study

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SUMMARY

Forests are not empty. There are various rights and interest in forests as well as the people who live in and around forests. If the Reducing Emissions from Deforestation and Degradation plus (REDD+) mechanism is to work unilaterally by state and overlook the role of various actors, then it is likely that REDD+ will fail. From our stakeholder analysis and political mapping in Jambi, a priority province for REDD+ implementation in Indonesia, we show that REDD+ actors with knowledge, power and leadership, can support or reject REDD+. Specifically, we discuss the implementation capacity and new directions in policy. The analysis also provides indications as to the readiness of Jambi to implement REDD+, who wins and loses in adopting REDD+ and intervention scenarios to make REDD+ work. The methods used in this study are general and could be implemented elsewhere in Indonesia or abroad.

Keywords: REDD+, actor, governance, institution- and-political-mapping, Jambi

Évaluation politique et analyse des acteurs de la REDD+: une étude de cas en Indonésie

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Les forêts ne sont pas vides. Il existe différents droits et intérêts dans les forêts, de même que différentes populations vivant à l'intérieur et aux alentours de celles-ci. Si le mécanisme de réduction des émissions liées à la déforestation et à la dégradation de la forêt et l'augmentation des stocks de carbone forestier (REDD+) doit fonctionner de manière unilatérale pour chaque État et négliger le rôle des différents acteurs, alors il échouera probablement. Dans notre analyse des parties prenantes et notre évaluation politique réalisée à Jambi, une province prioritaire pour la mise en œuvre de la REDD+ en Indonésie, nous montrons que les acteurs de la REDD+ dotés de connaissances, de pouvoir et de leadership peuvent appuyer ou rejeter le mécanisme de REDD+. En particulier, nous discutons des capacités de mise en œuvre et des nouvelles orientations en matière de politique. Notre analyse fournit également des indications sur la volonté de la province de Jambi de mettre en œuvre la REDD+, sur les gagnants et les perdants de la REDD+ et sur les scénarios d'intervention nécessaires pour réaliser la REDD+. Les méthodes utilisées dans cette étude sont générales et pourraient être appliquées ailleurs en Indonésie ou à l'étranger.

Análisis de los Actores de REDD+ y Mapeo Político: Un Estudio de Caso en Indonesia

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Los bosques no están vacíos. Hay diversos derechos e intereses en los bosques, así como la gente que vive en ellos o alrededor de ellos. Si el mecanismo para Reducir las Emisiones de la Deforestación y Degradación (REDD+) es de trabajar en forma unilateral con el estado, sin tomar en cuenta el papel de varios actores, es probable que REDD+ falle. A partir de este análisis de grupos de interés y mapeo político en Jambi, una provincia prioritaria para la implementación de REDD+ en Indonesia, se muestra que los actores de REDD+ que tienen conocimientos, poder y liderazgo, pueden tanto apoyar como rechazar REDD+. Específicamente, se discute la capacidad de implementación y las nuevas direcciones en politicas. El análisis también ofrece indicaciones sobre si Jambi está preparado para ejecutar REDD+, sobre quién pierde o gana al adoptarse REDD+ y escenarios de intervención para hacer funcionar a REDD+. Los métodos usados en este estudio son generales y pueden ser aplicados en otras partes de Indonesia o en otros países.

INTRODUCTION

All actors (counted stakeholder), including the government at various levels, are aware of the negative effects of deforestation and forest degradation. Efforts to reduce deforestation and forest degradation are gaining momentum with global efforts working to combat climate change. About 17% of climate change is attributed to deforestation and degradation (UNFCCC 2007). Reducing emissions from deforestation and degradation and enhancing carbon stocks (REDD+) is an effort to combat deforestation and forest degradation through carbon funding and market schemes. Stern (2007) and Chomitz (2007) found that reducing emission from deforestation is much more economical than establishing new forests to absorb CO_2. These have been discussed in the global arena e.g. COP 13, 14, 15 and 16. REDD+ aims to reduce emissions through reducing deforestation, improving forest management, conservation and increasing carbon stock. REDD+ has become a common debate in local and international policy arenas. (Annex 1 provides list of abbreviation used in this article.)

Policy studies frequently assume incorrectly that all actors have a common goal, but a lack of knowledge is not the only problem. Policy studies repeatedly recommend that governments manage extension and communication programs on conserving biodiversity, protecting national parks or regulating forest product trade as if all actors share a common interest. Searching for perfect regulations is also frequently recommended. Scientists often simply feed knowledge to the actors. In reality, each actor behaves according to their real goal and on limited information and capacity. To complicate the situation even further, actors interact with other actors, influencing and relying on each other.

Actors do not generally behave aimlessly. They are logically consistent and bound to their own view of the world (Purnomo *et al.* 2005). They are guided not only by the idea of maximizing their income but also by other values Actors prefer policies that are secure and increase returns on their assets. They tend to aggregate into groups to be able to influence policy within existing institutions (lobbies, parties and government) or against existing institutions. We need to discover how organized interests work to achieve goals, what government policies are adopted and how and when actors decide to reject, reform, or build political institutions (Frieden 2000).

While REDD+ is a hot topic worldwide, the various rights and interests of forest stakeholders is seldom understood or taken into account. Assuming that the state has 100% control over forests is neither correct nor useful. Forest areas are not empty: local people have been dynamically living in and around forests for decades or even hundreds of years; forest concessionaires have been allocated rights to harvest timber; plantation companies have the legal right to convert a part of forests to agricultural land; mining companies are interested in making a profit from coal deposits; politicians need to satisfy those who elect them; and high-level government officials in power are struggling to sustain their power. To make REDD+ work it is important to understand the behaviour or interests of all actors before they can understand REDD+. REDD+ is unlikely to embrace success if state actors manage the REDD + mechanism unilaterally, ignoring the roles of the various actors.

The first REDD+ demonstration activities and pilot projects have just launched, in 2010 and 2011. These efforts are not only about how to manage forests now but more notably about future commitment. State actors hold a specific position for short periods, rarely for more than five years. We should remember that often successors neglect or change previous policies and decisions, whereas local communities will continue to live in or near forests far into the future. Therefore, the interests of long-term future stakeholders, such as local communities, need to be well represented for REDD+ to be sustained.

This paper describes policies and actors' knowledge and power in terms of implementing REDD+ in Jambi. Jambi province is the 10th smallest of Indonesia's 33 provinces. Jambi has a varied landscape with peat swamps, lowlands and mountainous areas. The National Climate Change Council *(Dewan Nasional Perubahan Iklim, or DNPI)* is promoting Jambi, East and Central Kalimantan as models of green growth and REDD+ implementation in Indonesia. Jambi also qualified as a candidate province for REDD+ implementation by the Ministry of Forestry as a result of regional consultation, along with Central Kalimantan, Papua, East Kalimantan, Riau, Aceh, South Sumatra, West Kalimantan, and West Papua (Caldecott *et al.* 2011). By analyzing the actors and mapping their political interests and associations, this paper will contribute to the empowerment of key REDD+ stakeholders in Jambi Province as well as provide a model for other Indonesian provinces and other parts of the world.

CONTEXT

Administration

Jambi Province, covering 53,436 km² and comprising 51,000 km² of land and 426 km² of sea, was formed in 1958. It is located on the east coast of Sumatra (Figure 1). The total population in 2008 was 2,788,269 (54 people per km²) with a growth rate of 1.68%. Agriculture is the most common occupation in Jambi (55.1%) followed by trade (15.9%), services (13.7%), transportation (4.9%), construction (4.45%) and industry (3.6%) (BAPPEDA, 2009).

There are 11 districts in Jambi Province (Table 1), with 128 sub-districts and 1,329 villages. Jambi City is the capital of Jambi Province as well as the centre of business in Jambi. GOLKAR (*Partai Golongan Karya* or The Party of the Functional Groups) followed by PAN (*Partai Amanat Nasional* or National Mandate Party) and PDIP (*Partai Demokrasi Indonesia – Perjuangan* or Indonesian Democratic Party – Struggle) dominated the Jambi parliament. The Jambi parliament comprises 39 males and 6 females, 11 of whom are from GOLKAR.

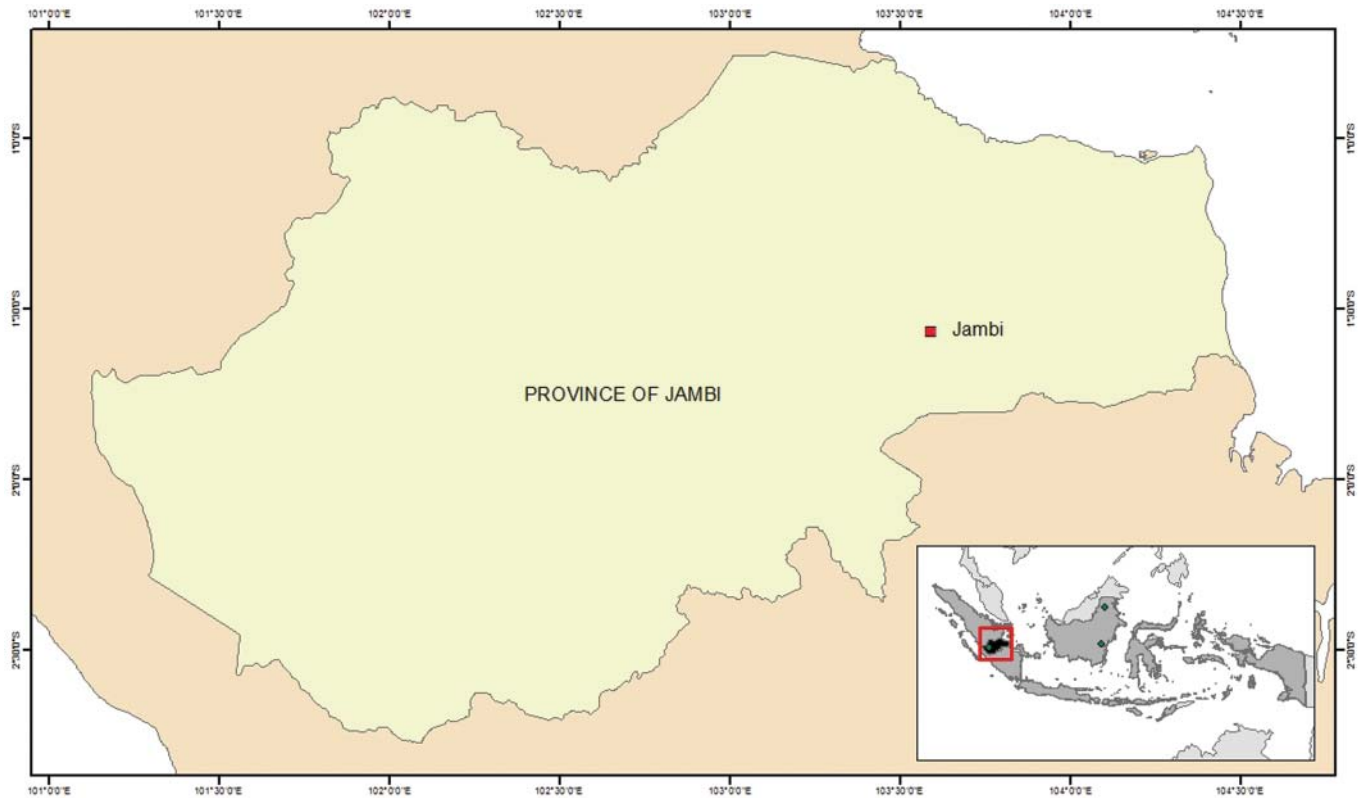FIGURE 1 *Situation map of Jambi Province, Indonesia*

TABLE 1 *Eleven districts and Cities of Jambi Provinces (BAPPEDA, 2009)*

No.	Name of District/City	Number of		Extent	Population
		Sub-district	Village	(km²)	(People)
1	District of Kerinci	12	209	3,808	322,322
2	District of Merangin	24	167	6,380	286,792
3	District of Sarolangun	10	131	7,820	219,472
4	District of Batanghari	8	114	4,983	223,061
5	District of MuaroJambi	8	133	6,147	301,082
6	District of Tanjab Barat	13	70	4,870	247,487
7	District of Tanjab Timur	11	93	5,330	211,560
8	District of Bungo	17	145	7,160	273,004
9	District of Tebo	12	95	6,340	265,547
10	City of Jambi	8	62	250	454,970
11	City of Sungai Penuh	5	395	392	77,315
		128	1329	53,480	2,882,612

Forest and Land Cover

In Indonesia forests are classified as forest areas (state owned property) and non-forest areas (community owned property). The government defines forest areas as 'a specific territory of forest ecosystems determined and or decided by the government as a permanent forest' (MoF, 2010a). Forest areas are legally determined by the government and currently not all forest areas are covered by trees. Forest areas, based on Ministry of Forestry regulation No. 412/Kpt-II/1999, are categorised into four types: conservation forest, protected forest, production forest (full and limited) and conversion forest. Forest areas outside designated forests are referred to as 'other land use' (*Areal Penggunaan Lain* or APL). Based

on the LANDSAT ET+7 satellite image interpretations in 2006 conducted by the Ministry of Forestry (MoF, 2010a), forest cover for each forest category and other land use are shown in Table 2. These interpretations are the most current and formal data for Jambi land use from the Ministry of Forestry. In the future, however, the Ministry of Forestry may use moderate resolution imaging spectroradiometer (MODIS) as suggested by Hansen *et al.* (2009) to improve the interpretation results.

Forest and Land Use Policy

Indonesia's legal framework has established certain goals for the forestry sector, including economic outputs, equitable distribution of benefits to improve people's welfare, watershed protection, and conservation. It is in line with the Indonesian Forestry Act No. 41 Year 1999, which states "Forest is a blessing controlled by the State to provide multiple uses. It should be managed, utilized, and maintained for people's maximum welfare in a good, fair, wise, transparent, professional and accountable manner. Sustainable forest management should accommodate community aspirations and participation, customary, cultural, and social values". Also, forestry administration "shall be based on benefits and sustainability, democracy, equity, togetherness, transparency and integration" and "shall be oriented for people's maximum welfare based on equity and sustainability principles." (The World Bank 2006).

Based on the current issues facing Indonesia's natural resources, the forestry sector, with regard to the Midterm National Plans, focuses on environmental development and disaster management. The forestry sector will support reform within the government at all levels and good governance as well as harmonize various regulations, which will involve the development of food security and public infrastructure and integrated spatial management. The government aims to make the forestry sector useful for the economy, environmental quality and people's welfare. For the next five years the Indonesian Ministry of Forestry has eight policy priorities (MoF 2010b), which include to:

1. Consolidate and stabilize forest areas
2. Reforest and improve carrying capacity of watersheds
3. Secure forests and control forest fires
4. Conserve biodiversity
5. Revitalize forest utilization and industries
6. Improve local communities living in or near forests
7. Mitigate and adapt forestry sectors to climate change, and
8. Strengthen forestry institutions.

Forestry is a part of land use which must be in harmony with other land uses. Law No. 5/1960 know as Agrarian Basic Regulation (*Undang-Undang Pokok Agraria*) underpins land policy in Indonesia. Sastrowihardjo (1999) has summarized key points for this law:

- The national unity concept is used for the purpose of unity in politics, economics, culture, national defense and security. It defines that national land, water and space and all natural resources are national properties.
- Communal land rights can be acknowledged as long as, in reality, they conform to the national interests and do not conflict with existing regulations.
- Social functions are embedded in the land rights.
- Obligations of right holders: persons, legal bodies, or institutions with a legal relation to the land must use their lands, establish justice, and protect the right of less fortunate people based on the existing regulation.
- Land use planning is a key instrument to give maximum prosperity to the people and the state, as regulated in Law No. 24/1992 concerning spatial use management, land, is an integral part of space. The principles of land use planning are
  o Sustainability. Land, as the natural resources, should be used for the maximum prosperity of the people at the present time and in future.
  o Optimization. The use of land should be effective and efficient so as to achieve maximum prosperity for the people.
  o Equality and harmony. Land use PLAN should be able to accommodate various development activities on the proper location based on their designation and function.

TABEL 2 *Forest cover inside and outside forest area in Jambi year 2006 (in 1000 Ha; MoF, 2010a)*

Forest cover	Forest area						Other land use (APL)	Total
	Permanent forest				Conversion forest	Total forest area		
	Conservation area	Protection forest	Limited production forest	Full Production forest				
Forest	589.4	134.3	188.1	498.9	0	1,410.7	161.2	1,571.9
Non-Forest	122.1	38.7	107.0	499.5	0	767.3	2,409.0	3,176.3
Data deficiency	6.3	1.3	5.5	11.8	0	24.9	39.0	63.9
Total	717.8	174.3	300.6	1,010.2	0.0	2,202.9	2,609.2	4,812.1

Government land use planning in Jambi supports the provinces development plans. The provincial administration has set out four development priorities for in its the Long Term Development Plan (RPJP) 2005–2025 and Mid Term Development Plan (RPJM) 2010–2025. They include the improvement of: basic infrastructure, human resources and culture, institutional arrangements, and management of natural resources and environment. Jambi Forestry Unit programmes that contribute to the achievement of the provincial government programmes include: combating illegal logging and illegal non-timber products; law enforcement; control of forest areas; and revitalization of forest industries.

Deforestation, Forest Degradation and Land Use Change

Land use conversion to agricultural plantation, mining, transmigration, fire and encroachment by local communities are the main causes of deforestation in Jambi. Deforestation occurs mostly in production forests, followed by limited production forests, conservation areas and protected forests which, between 2003 and 2006, amounted to 34,787.5 ha (Table 3). The annual deforestation rate from 2003 to 2006 was 11,596 ha. Table 4 provides land use change from 1982/1983 to 1991/1992, which amounted to 681,000 ha. This means that the annual rate of deforestation in the past rate was 75,611 ha per year, higher than the current rate. The lower rate of deforestation may be due in part to the lack of conversion production forest in Jambi. Conversion production forest is forest intended for conversion to agricultural land or other land uses.

Due to deforestation and forest degradation Indonesia has become one of the largest emitters of greenhouse gases (GHG) in the world. The sources of carbon stock in forests comes from forest, peat lands, agroforestry, plantations, fallow land, grassland, shifting cultivation, housing compounds and surrounding and mixed unproductive land. Emissions from the forestry sector occurs as carbon stocks are depleted and released into the atmosphere when forests and other woody biomass stock, and grass lands, are converted or land management ceases, and forest fire (PEACE 2007).

The direct drivers for deforestation and degradation differ in each country. The drivers of deforestation and degradation in Indonesia can be categorized into direct drivers and underlying causes. The direct drivers are natural causes and human activities, including logging, illegal logging, forest fires related to land preparation for forest plantation and estate crops and mining. The underlying causes of deforestation and degradation are market failures, policy failures, governance weakness, and broader socio-economic and political issues (Contreras-Hermosilla 2000). Geist and Lambin (2001) provide proximate causes for deforestation which consist of agricultural expansion, wood extraction, and infrastructure extension. The prioritisation of development over conservation clearly caused deforestation (Hansen *et al.* 2010). Jambi has experienced deforestation and forest degradation due to forest conversion to agricultural land, mining, illegal logging and unsustainable forest management. Table 5 shows the decrease of forest concessions due to unsustainable operations in Jambi. Both logging companies and smallholders were responsible for forest fire occurrences (Stolle *et al.* 2003). Premature decentralization and lack of local capacity

TABEL 3 *Deforestation in Jambi 2003–2006 (Jambi Forestry Unit, 2008)*

Deforestation in	Forest area					Total
	Permanent forest				Non permanent forest	
	Conservation area	Protected forest	Limited production forest	Production forest	Convertible production forest	
Primary forest	14.6	0	760.4	20.8	0	795.8
Secondary forest	1,451.1	378.2	4,024.6	18,756.8	0	24,610.7
Other forest	0	0	0	9,381.0	0	9,381.0
TOTAL	1,465.7	378.2	4,785.0	28,158.6	0	34,787.5

TABLE 4 *Jambi land use change from 1982/1983 to 1991/1992 ((in 1000 Ha; Jambi Forestry Unit, 2008)*

Forest cover	Forest area					Total forest area	Other land use (APL)	Total
	Permanent forest				Conversion forest			
	Conservation area	Protection forest	Limited production forest	Full Production forest				
1982/1983	493	1,148	0	974	1,013	3,628	1,472	5,100
1991/1992	603	181	1,073	363	727	2,947	2,153	5,100
Land use change	110	−966	1,073	-611	−286	−681	681	0

TABLE 5 *Forest concessions in Jambi*

Year	Number of forest concession permit (unit)	Concession extent (Ha)
1988/1989	30	2,566.000
1991/1992	27	2,120.000
1996/1997	16	1,447.779
1997/1998	15	1,153.499
1998/1999	14	1,113.499
1999/2000	13	859.984
2000/2001	13	859.984
2001	8	545.559
2002	8	545.559
2003	7	455.490
2004	5	328.349
2005	13	792.594
2006	2	45.825
2007	3	133.705
2008	2	45.825

did not improve forest conditions in Indonesia (Resosudarmo, 2005; Barr et al. 2006).

METHODS

We used stakeholder analysis as described by Schmeer (1999) and also political mapping as described by Brinkerhoff and Crosby (2002). Brinkerhoff and Crosby (2002) proposed tools for stakeholder analysis, policy typology and political mapping to understand the policy reform process. They suggest that stakeholders be categorized based on the groups' interests in the various issues pertaining to REDD+, available resources, resource mobilization capacity and position in the issue. The stakeholder analysis can yield useful and accurate information about people and organizations that have interests in REDD+. This information was used to provide input for institutional and political mapping, and later to develop action plans and to guide a participatory, consensus-building process. The stakeholders in REDD+ are well connected to deforestation agents, as described by Angelsen and Kaimowitz (1999). They provided a framework for understanding deforestation and described agents of deforestation as consisting of individuals, households or companies. They could be small farmers, ranchers, loggers and plantation companies. Geist and Lambin (2001) furthermore mentioned that agents can be slash and burn farmers, agribusiness, cattle ranchers, miners, oil corporations loggers and non-timber enterprises.

Schmeer (1999) proposed eight steps for stakeholder analysis i.e. (a) planning the process; (b) selecting and defining policy; (c) identifying key stakeholders; (d) adapting the tools; (e) collecting and recording the information; (f) filling in the stakeholder table; (g) analyzing the stakeholder table; and (h) using the information.

The political map simplifies the real world into horizontal and vertical dimensions. The vertical axis constitutes the political actors that are categorized into four sectors: external sectors, social sectors, political parties and pressure groups. The horizontal axis assesses the degree to which each group supports the government (Brinkerhoff and Crosby 2002).

RESULTS

REDD+ Policy Characteristics

REDD+ policy is intended to develop actions to reduce carbon emissions through reducing deforestation, forest degradation and enhancing carbon stock in forests, ultimately, to reduce global warming. REDD+ is defined as 'policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries' (Parker *et al.* 2009). It is expected that concerted efforts on the part of all stakeholders could reduce carbon emissions below business as usual (BAU).

The impetus for the REDD+ policy has come mainly from developed countries and is now a global concern. REDD+ is voluntary and will adopt market mechanisms to ensure the opportunity costs of reducing carbon emissions are compensated. However, while the cost of not logged forests, for instance, is clear but complex depending on its opportunity cost (Angelsen and Kaimowitz 1999), the benefits will depend on the readiness of the REDD+ market.

The government bears the cost of formulating, communicating and implementing REDD+ policy at different levels. Aid from donors, particularly from Norway, Australia and international agencies, have already arrived to support REDD+ implementation. The cost of transitioning can be categorized as short term, medium term and longer term. The short term is mainly for capacity building and meeting the funding gap. The capacity building embraces research, analysis and knowledge sharing, policy and institutional reform and demonstration activities. The medium term involves costs for determining effective national targets, monitoring, reporting andverification (MRV), link forest carbon credits and markets and advocacy for good governance. The longer term embraces costs for inclusion in the global carbon market (Eliasch, 2008). The calculating cost of halting deforestation by opportunity cost can be misleading (Gregersen *et al.* 2010)

REDD+ policy is quite complex, its issues are shown in the mind map in Figure 2, which covers scope, spatial scale, approach, undesired outcomes, reference level and MRV. These are general issues in Indonesia, which are also faced by Jambi. The MRV system requires remote sensing technology to develop reference levels and monitor change. REDD+ requires commitment and change of behaviours from various

FIGURE 2 *REDD+ issues*
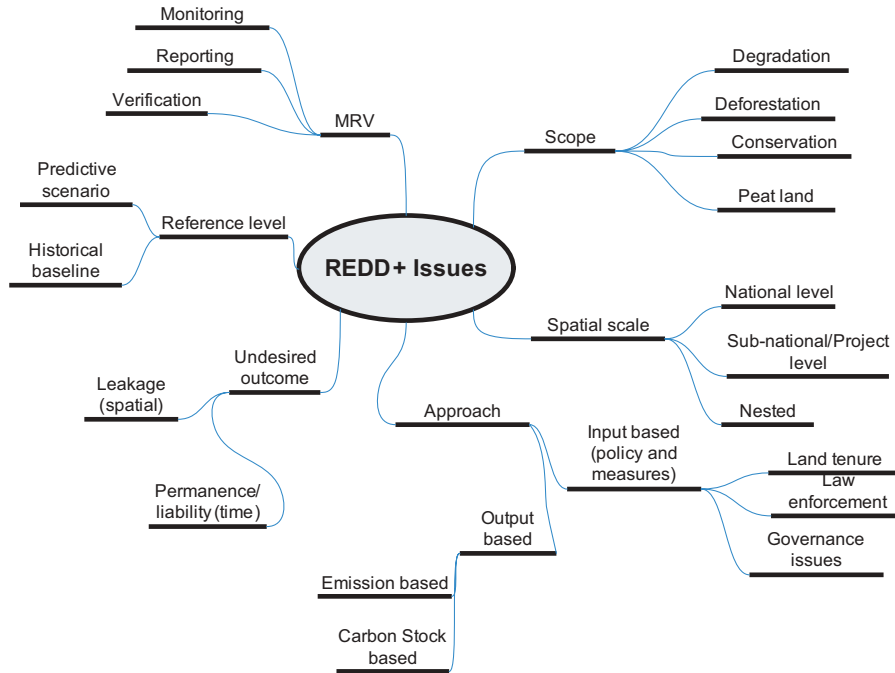
actors who deal with forests directly and indirectly as well as creating the demand for REDD+ credit. The complexity of REDD+ requires the involvement of many institutions such as Ministries of Forestry, Agriculture, Provincial Landuse Planning Unit, business companies and NGOs. This complexity implies administrative commitment to manage and make REDD+ work. REDD+ is implemented using a nested approach, where national, provincial and local levels work in synergy. While much once-centralized authority has devolved to the districts in Indonesia since 2004, the districts lack capacity to manage that autonomy (Barr *et al*. 2006). Considering this situation, REDD+ must be initiated at all levels, and must not depend on a particular level. Jambi is also among the province willing to implement REDD+ and green growth, as recognized by DNPI. Furthermore, Jambi is with a varied landscape of peat swamp, lowlands and mountainous areas but relatively small. The size of the province is similar to the size of many districts in Papua and Kalimantan.

The policy change process will not occur instantly. Policies at the national level need to be translated to provincial and district levels. The same broader policies need to elaborate detailed regulations. Real change will take time from understanding the policy, capacity building and developing plans at different levels to the implementation of REDD+, scheduled for after 2012.

Following Brinkerhoff and Crosby (2002) Table 6 shows the characteristics of REDD+ policies in Jambi, a simple test of the viability of the implementation of REDD+ policy. Column A indicates simplifying factors, Column B neutral, and Column C complicating factors. We found that the total number of checks in Column C is much bigger than Column A. This suggests that REDD+ policy will face some difficulties and challenges in implementation.

Stakeholder Analysis

The interviews for the stakeholder analysis were carried out in May 2010.

Selecting and defining policy
The analysis focused on REDD+ policy at the provincial level. REDD+ provides a new framework to allow deforesting countries to break this historical trend of deforestation and degradation.

The government of Indonesia, under National Appropriate Mitigation Actions (NAMAs), has committed to reduce carbon emissions by 26% (0.767 Gt) below BAU by 2020 without international assistance and 41% (1.189 Gt) with financial assistance from donor countries from the projected 2.95 Gt (Figure 3). The forestry sector is in charge of more than half (14%) of emission reductions (LTS International, 2011). The provincial government of Jambi has developed Local Appropriate Mitigation Actions (LAMAs) and plans to reduce carbon emissions by 70 $MtCO_2eq$ in 2020. Fire prevention will contribute 26 Mt CO_2eq (37%) to the reduction of CO_2, sustainable forest management 22 Mt CO_2eq (32%), peat management 10 Mt (14%), and various other actions 12 Mt (17%). This will require a budget of US$400 millions (BAPPEDA Jambi 2009).

Identifying key stakeholders
We started by identifying all possible stakeholders by reviewing the existing information including provincial workshop (conducted in January, 2010) results, stakeholder consultations and mass media. The main criteria for identifying the key stakeholders were: proximity to forest, legal rights, knowledge of REDD+, traditional rights and cultural.

TABLE 6 *REDD+ policy characteristics in Jambi*

	Simplifying factors (A)		**Neutral (B)**	**Complicating factor (C)**	
Where did the impetus for the policy come from?		Inside the country		Outside the country	v
		Inside the government	v	Outside the government	
Who decided the policy and how?	v	With democratic legislative process		Without democratic legislative process	
		With widespread participation	v	Without widespread participation	
What is the nature of the benefits and to whom do they accrue?		Visible		Invisible	v
		Immediate		Long term	v
		Dramatic	v	Marginal	
What is the nature of the costs and who bears them		Invisible		Visible	v
		Long term		Immediate	v
		Marginal	v	Dramatic	
How complex are the changes?		Few changes		Many changes	v
		Few decision- makers		Many decision makers	v
		Small departure from current practices, roles, and behaviours		Large departure from current practices, roles and behaviours	v
		Limited discretion		Large discretion	v
		Low technical sophistication		High technical sophistication	v
		Low administrative complexity		High administrative complexity	v
		Geographically concentrated		Geographically dispersed	v
		Normal pace		Urgent/emergency pace	v
		Single event		Permanent changes	v
		Low level of conflict about nature and value of the changes		High level of conflict about nature and value of changes	v
Total number of checks:	1		4		15

Annex 2 shows the 30 selected key stakeholders and the reasons for selecting them. These selected stakeholders include individuals, households, or companies involved in land use change as described as agents of deforestation by Angelsen and Kaimowitz (1999) as well as other agents involved in agricultural expansion, wood extraction, and infrastructure extension (Geist and Lambin, 2001). We then grouped them into eight sectors. Since resources and time were limited, we prioritized stakeholders (based on their availability) to be interviewed, as marked with 'v'.

Adapting the tools
We developed a questionnaire to understand the stakeholders' characteristics and their opinions of REDD+. It shows their level of knowledge, leadership, and their related position on REDD+. They can be supporters, neutral or opposers of REDD+.

Collected and recorded the information
The interviews with the key stakeholders were conducted in May 2010. All stakeholders received us well and spent some of their time with us. Additional data like plans, monographs, newsletters and statistical data were also gathered after the interviews.

Analysis of the stakeholder tables
The information was then summarized in three tables of results i.e. knowledge level (Table 7), power and leadership (Table 8), and actors' position to support or oppose REDD+ (Table 9). Knowledge in this context is defined as the level of accurate knowledge the stakeholder has regarding the REDD+ policy (Brinkerhoff and Crosby 2002). We consider stakeholders has a high level of knowledge if can describe accurately the REDD+ policy processes at national and local level or if they are involved in these processesThey have a low level of knowledge if they are unaware of REDD+, have not

FIGURE 3 *NAMAs are intended to reduce carbon emissions*
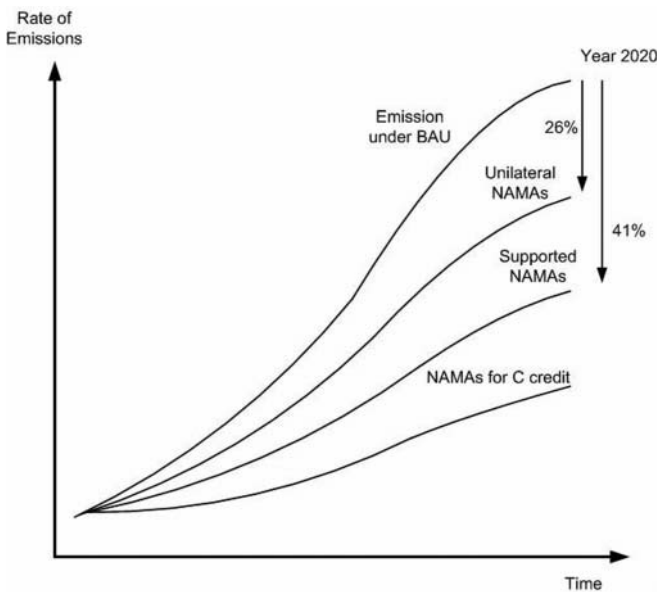
heard about it, or do not understand what they have heard. A medium level of knowledge means they are in between, they are informed but don't really understand.

First we categorised the stakeholders by types rather than individuals (Table 7) The Universities, research institutes and donors had more knowledge of REDD+ than business entities and local farmers. Forest and land use public entities, political

TABLE 7 *Stakeholders level of knowledge on REDD+*

Stakeholder type	Knowledge Level		
	High	Medium	Low
General public entities		V	
Forest and land use public entities		V	
Political entities		V	
Business entities			V
Local farmers			V
Universities and research institutes	V		
NGOs		V	
International agencies/donors	V		

entities and NGOs had a medium level of knowledge. They are frequently involved in discussions on REDD+ at local and national levels. However, they seldom fully understand REDD+. General public entities, business entities and farmers had low level of knowledge and therefore understanding of REDD+. They had heard about REDD+ but had no knowledge about how it might be implemented.

Table 8 shows the relative power and leadership of the stakeholders. Power is defined as the combined measure of the amount of resources a stakeholder has and their capacity to mobilize those resources, while leadership is defined as willingness to initiate, convoke or lead an action (Brinkerhoff and Crosby 2002). Local farmers were not informed about REDD+, had no leadership and definitively low power. NGOs had high leadership but low power. The leadership came from the fact that they were informed about REDD+ and they were involved in various initiatives, workshops or projects on REDD+. Environmental agencies, located in the same quadrant had knowledge and leadership, but low budget to influence the REDD+ process. The general public entities, business entities, transmigration and provincial plantation units had power to influence policy but they did not have leadership in REDD+. The public entities such as BAPPEDA could make plans and allocate more government budget to endorse REDD+. Business entities like oil palm plantation owners had power to plant oil palm on degraded land only. The transmigration Unit can shift the current policy to only migrate people not to pristine forests and not cut forests for agricultural land. Provincial agricultural plantation unit can develop policies to intensify agricultural land and not to extend agricultural land into forested areas. Political entities, in democratic countries, including Indonesia, have power to influence those in power and shape budgets, rules and regulations. The Provincial Forestry Unit had power over forest management. It, however, needed to increase its concern and leadership to reduce deforestation and degradation at all costs. International agencies/donors in fact had leadership in REDD+ due to their access to global knowledge and involvement in various forums such as UNFCCC. The agency had power to influence because they had money and networks to available funding. Indeed, the REDD+ campaign at the international level is very proactive and is now on the global agenda.

The position of each stakeholder type on REDD+ is given in Table 9. Position refers to the stakeholder's status as a supporter or opponent of REDD+ policy. Most stakeholders either support or are neutral on REDD+ initiatives, plans and

TABLE 8 *Leadership and power on REDD+ in Jambi*

Power & Leadership	Low Leadership	High Leadership
Low power	Local farmers	Environmental Prov. Agency NGOs
High power	General public entities Business entities Provincial Transmigration Unit Provincial Plantation Unit Political entities Provincial Forestry Unit	International agencies/donors

TABLE 9 *Stakeholders' position on REDD+*

Stakeholder type	Support	Neutral	Opposition
General public entities		V	
Forest and land use public entities	V	V	
Political entities	V		
Business entities		V	V
Local farmers		V	
Universities and research institutes	V		
NGOs	V	V	
International agencies/ donors	V		

actions. The general public entities such as BAPPEDA are aware of the issues and will support REDD+ if placed on the government agenda. From our survey we could see no self initiative or planned action related to REDD+. The Provincial Agricultural Unit continues to complain that there is no longer land for agriculture expansion. The Forestry Units support the REDD+ idea, since it has already been scheduled by the central government. Surprisingly, the political entities support for REDD+ is partly only because it is in line with public concerns regarding community and environmental issues. Business entities were worried that if REDD+ were implemented they would not be able to utilise or convert their concessions and would have to put more effort and funding into conservation. The local farmers had no idea of what or how REDD+ would be implemented. Strong support came from universities and research institutes that believe REDD+ could save forests. NGOs support REDD+, but are concerned that local community rights not be overlooked. Strong support also came from the international agencies/donors of REDD+.

This analysis does not argue that stakeholders at provincial level as the most important stakeholders. REDD+ in Indonesia is implemented as a nested approach in which all levels, including national and district levels, are important. Each level strives to make REDD+ work and seeks synergy with other levels. Presidential Instruction No. 10/2011 on the moratorium on new permits for primary forest and peatland use explicitly addresses stakeholders at national, provincial and district levels for suspending the permit and having better coordination and synergy. This indicates that all levels of stakeholders play important roles in REDD+, as decentralization reform continues. Furthermore, Rasyid (2003) revealed the focus of regional autonomy at district level as stated on Laws 22 and 25 of 1999 was a result of compromising between provincial level federalism and national coherence centralism interests.

Political Mapping

REDD+ policy needs support and resources if it is to be successfully implemented. Policy change and politics 'who gets what, when and how' are intimately related (Lasswell 1958). In democracy, public officials need to operate in ways that respond to their citizens' needs and desires, balance special interests against equity and distributional considerations, and generate political backing. To be successful policy makers need capacity to assess the political environment for decision-making and the ability to develop strategies that will obtain additional resources for the policies (Brinkerhoff and Crosby 2002).

Figure 4 shows the analytical approach for describing a political map of REDD+ policy. The vertical axis shows the political actors organized into five sectors: external sectors, government sectors, social sectors, political parties and pressure groups. The social sectors include policy advisors, think-tank organizations, businesses and associations. The horizontal axis is the degree to which each group supports the policy. Support for the government varies from 'core' or 'central support' to 'ideological' or 'moderate support'. Support and opposition are labelled 'left' or 'right'. 'Left' indicates the groups that are more 'progressive' or 'interventionist' and 'right' indicates more 'conservationist' or 'less interventionist' than the government. This judgment was situational and dependant on the policy context. The legal opposition points to disagreement with policy, but they firmly support the rules of the political system. Anti-system opposition shows not only opposition to the policy, but also how decisions are made. They do not follow the norms of the existing system (Brinkerhoff and Crosby 2002).

Since District Forestry Unit (DISHUT) in Jambi is the primary government focus of decision making, regarding how REDD+ is arranged, it is placed at the centre of the map. It is supported firmly by external sectors EU-FLEGT office, Norway and Australia. Although, all government sectors support the policy, we distinguish them by putting BLHD for core support and others i.e. BAPPEDA, BPN, BPS and DISTRANS for ideological support. We believe DISBUN is unlikely to support the REDD+ policy for fear that the policy will weaken their chance of more land for plantation development.

Research organizations from the social sector support the idea of REDD+ and provide knowledge on REDD+. Oil palm companies will oppose REDD+ if prohibited from extending oil palm plantations. The governor's office, which is supported by the political party PAN, supports the policy as a way to manage forests sustainably and sustainable agriculture without slash and burn. NGOs, as pressure groups, support the policy but are pushing for more comprehensive and immediate approaches to improve local community livelihoods. They also believe that local community rights to carbon need to be clarified before the REDD+ policy can work.

REDD+ Policy Network Map

A policy network map is useful for concentrating on a particular policy idea and understanding the power access among various stakeholders. Figure 5, a simplified policy network map for REDD+ in Jambi, shows actors who have access to decision makers (solid line direct access) and dashed line indirect access).

FIGURE 4 *Political map of REDD+ Policy in Jambi*

	Opposition			Support		Opposition	
External sectors				EU-FLEGT office Norway Australia			
Sector position	Anti-system	Legal opposition	Ideological support	Core Support	Ideological support	Legal opposition	Anti-system
Government al sectors				**DISHUT** BLHD	BAPPEDA BPN BPS DISTRANS	DISBUN	
Social Sectors			Farmers	CIFOR ICRAF		Oil palm companies Forest plantation companies	
Political parties			PAN				
Pressure groups			WARSI SETARA				

NGOs (SETARA and WARSI) can advocate DISHUT just as much as research organizations such as CIFOR and ICRAF. National institutions such as DNPI and ministries can provide the governor with information and knowledge. Parliament and international donors have direct access to the governor and therefore are able to influence decisions made by the governor. DISHUT manages forest areas, while DISBUN manages agricultural plantations; both are under the direction of the governor.
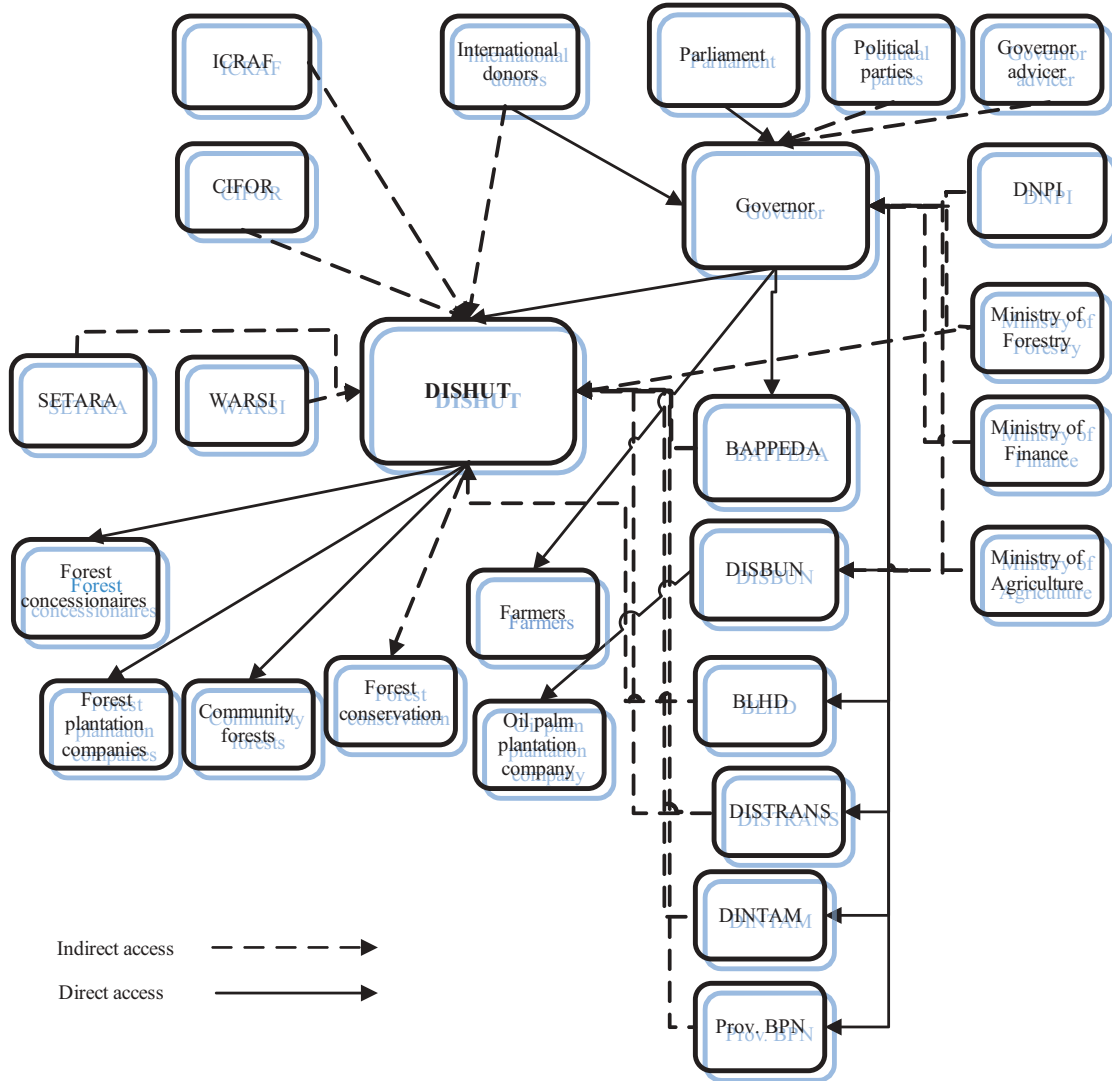
DISCUSSIONS

REDD+ policy will be difficult to implement in Jambi due to various factors including complexity of policy and lack of strong leadership. While the stakeholder knowledge level is medium their support of REDD+ ranges from 'Medium' to 'Neutral'. Currently implementation lies with the 'Hard' policy characteristics and 'Medium' stakeholder's knowledge and support. The REDD+ political environment has mostly only ideological support for REDD+. This situation can be illustrated in a two dimensional matrix as in Figure 6. Without serious effort, implementation of REDD+ in Jambi will most likely fail. This situation looks even worse when we realize that only International agencies/donors have high leadership and power to implementing it. The Provincial Environmental Agency and NGOs have high leadership but no power.

In the context of Figure 6, we have to move the current situation into a different quadrant where the policy is easier to implement and improve stakeholder knowledge, support and the political environment. Now we need to revisit the REDD+ policy characteristics in Jambi as given in Table 4.

First we have to localize REDD+ issues. Although we understand the REDD+ initiative, we need to synergize it with the needs of national and local development, making low carbon development a local intuitive to meet local needs (Irawan and Tacconi, 2010). Local actors have capacity to articulate sustainable forest management and development in local context (Purnomo *et al.* 2005). Trade-offs and complementarities between global environmental benefits and local profitability should also be considered (Murdiyarso et al. 2002). Communications and campaigns are of utmost importance if local actors' mind-sets, are to be change.

FIGURE 5 *REDD+ policy network map in Jambi*

The second one is to make the benefits of REDD+ visible and immediate. A lot of REDD+ discussions at national and global levels are now focusing on carbon accounting and governance. While these discussions are very important, local actors require something more tangible both in time and space. Without the latter it will be difficult to attract local

FIGURE 6 *REDD+ Policy characteristics and stakeholder knowledge and support*

		Implementation of REDD+ Policy		
		Difficult	Medium	Easy
Stakeholder Knowledge and support level mode	High			Goal: Highest probability of success
	Medium	**Current situation**		
	Low	Lowest probability of success		

actors to any form of REDD+. Clearly identified buyers can help to provide something more tangible. The medium term development plan for Jambi from 2010 to 2014 focuses on improvement of basic health and education services, economic growth and improvement of natural resource and environment management. REDD+ must not only address environmental conservation but also economic growth and health and education basic services. In the long term development plan (2005–2025), Jambi plans to become modern, self-sufficient, just and prosperous (BAPPEDA 2005).

The third is to deal with the constraints; the costs of REDD+ are visible and immediate. A halt to current practices that result in carbon emissions such as clearing forests, illegal logging and slash and burn are needed to reduce emissions. Furthermore, proof of additionality, avoiding leakage, establishing MRV (carbon Monitoring, Reporting and Verification) and finding buyers are also urgently required. All are visible costs, and also happen immediately. These costs must be shared and acceptable for local and key actors, particularly those who need to change their livelihoods. A part of the cost

is transaction costs. Reducing transaction costs will provide greater benefits for the real carbon players. This could be achieved by, for example, reducing carbon trade brokering using internet marketing portals for REDD+. International donors and agencies need to share the costs.

If the number of buyers increases, then the demand will increase. For this to happen, it is extremely important for COP (Conference of the Parties) negotiations, and the like, to be successful. Carbon decreasing agreements among countries must be clear, large and binding. Connecting to local and visible markets e.g. Garuda Airlines, will provide two benefits, first closer to the market usually means greater benefits; and the second an increase in local carbon trading.

The last challenge is how to simplify and avoid major changes such as those from REDD to REDD+ where associated policies have become increasingly complicated and much more difficult to implement. The challenge is to improve the policy, not necessarily to perfection, while making sure it works. To make REDD+ work changes should be few and small, if any, not dramatic, few decision makers, fewer regulations, limited bureaucracy, single events and low level of conflict and all introduced at a 'normal' (not too fast) pace. We need a simpler REDD+ mechanism, for example the Brazil model, which is based on grants to reduce carbon emissions, and avoid the market mechanism. Starting from conservation areas will have a lower impact on local livelihoods, which should make it easier to implement REDD+. Although this will not reduce carbon emissions dramatically it will increase support for REDD+.

Another proposed way to reduce complexity is to create a 'superbody' for REDD+. This superbody should manage the REDD+ mechanism without confusing everyone. This superbody could overcome the vulnerability of REDD+ policy in which actors have various levels of leadership and power. Such an institution might emerge from the National REDD+ Task Force, under UKP4 (*Unit Kerja Presiden bidang Pengawasan dan Pengendalian Pembangunan* or Presidential Working Unit for Supervision and Management of Development), which is currently headed by Kuntoro Mangkusubroto and Heru Prasetyo as head and secretary of the task force. Since this superbody is at national level, it could assure REDD+ policy implementation and empower REDD+ supporters throughout Indonesia. By relying on the power of the president, such a superbody could significantly influence the policy process at provincial level.

To strengthen REDD+ policy support we also need to disseminate REDD+ knowledge to those who have power but low leadership i.e. general public entities, business entities, Provincial Transmigration Unit, Provincial Plantation Unit, political entities and the Provincial Forestry Unit. Once these leaders are knowledgeable about REDD+, implementation will be easier.

It is also necessary to provide livelihood alternatives for those who have low power and low leadership, particularly local farmers and communities. It is important to ensure that they are not worse off with REDD+. If they are better off with REDD+, they are more likely to support or even provide leadership for REDD+.

Government support, particularly funding, is extremely important for those who have leadership but low power. The Environmental Provincial Agency needs additional budget to communicate REDD+ to all stakeholders. The government budget is the common source of funding. Grants from foreign agencies and co-operations are needed to boost and support the agency's leadership.

NGOs such as WARSI which also have high leadership and uncertain budget should be empowered by connecting them to international agencies and cooperation. They can be very effective particularly in facilitating local communities and civil society in general.

CONCLUSION

REDD+ policy right now in Jambi faces significant challenges to success. This situation is frustrating as the actors who have high leadership are not in power. For a policy to work we have to change the direction of the current situation where the policy is easier to implement and able to improve stakeholder knowledge, support and the political environment. The complicating factors of REDD+ policy need to be simplified by, among others, giving better space for local initiatives, showing real benefits to actors, reducing complexity by developing a super-body. Empowering those who have low power but high leadership is as important as the effort of influencing those who have low leadership but high power.

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ANNEX 1 *List of Abbreviations*

BAPPEDA	Regional Planning Agency
BAU	Business As Usual
BLHD	*Badan Lingkungan Hidup Daerah* (Environmental office at provincial level)
BPN	*Badan Pertanahan Nasional* (National Land Use Agency)
BPS	*Badan Pusat Statistik* (Center of Statistical Agency)
CO_2	Carbon Dioxide
COP	Conference of the Parties
DISBUN	*Dinas Perkebunan* (Plantation Provincial Unit)
DISHUT	*Dinas Kehutanan* (Forestry Provincial Unit)
DISTAN	*Dinas Pertanian* (Agricultural Provincial Unit)
DISTRANS	*Dinas Pertambangan* (Transmigration Provincial Unit)
DNPI	*Dewan Nasional Perubahan Iklim* (National Climate Change Council)
EU	European Union
FLEGT	Forest Law Enforcement, Governance and Trade
GHG	Greenhouse Gases
GOLKAR	*Partai Golongan Karya* (Party of the Functional Groups)
LAMAs	Local Appropriate Mitigation Actions
MoF	Ministry of Forestry
MRV	Monitoring Reporting Verification
NAMAs	National Appropriate Mitigation Actions
NGO	Non-Governmental Organization
PAN	*Partai Amanat Nasional* (National Mandate Party)
PDIP	*Partai Demokrasi Indonesia - Perjuangan* (Indonesian Democratic Party – Struggle)
PEACE	*Pelangi Energi Abadi Citra Enviro* (a company)
REDD	Reducing Emissions from Deforestation and Degradation
RPJM	Mid Term Development Plan
RPJP	Long Term Development Plan
UKP4	*Unit Kerja Presiden bidang Pengawasan dan Pengendalian Pembangunan* (Presidential Working Unit for Supervision and Management of Development)
UNFCCC	United Nations Framework Convention on Climate Change
WARSI	Indonesian Conservation Community (a NGO network)
WWF	World Wildlife Fund

ANNEX 2 *List of REDD+ stakeholders in Jambi*

No	Sector	Stakeholder	Reason for selection	Priority
1	General public entities (Government)	BAPPEDA)	Land use planning and budget allocation to include REDD possible area and finance	v
2		BPN at Provincial level	Land use authority outside forest area. REDD may locate outside forest area (kawasan hutan)	
3		BPS	Office for supplying land use data	
4		BLHD	Focal point of REDD+ policy and its implementation	v
		Finance Provincial Unit (*DINAS KEUANGAN*)	Responsible for government income and budget planning that may include REDD+ business	
5	Forest and land use public entities (Government)	Forestry Provincial Unit (DISHUT)	Responsible for forest area management and policy	v
6		DISBUN	Manage and control agricultural plantation that may jeopardize forests	v
7		DISTAN	Manage and control agricultural seasonal plantation that may jeopardize forests	
8		DISTRANS	Responsible for people migration to Jambi that may be located in forest area	v
9		Mining Provincial Unit (*Dinas Pertambangan*)	Responsible for mining policy that may be located in forest area	
11	Political entities	Parliament	Have significant impact in REDD+ related regulation and policy formulation. They can control REDD+ policy implementation	
12		Governor adviser/PAN	Responsible for implementing plant and coordinate the public institutions	v
13	Private entities	Forest concessionaires	Could be area for REDD+	v
14		Forest industrial planta-tion	Could be area for REDD+	v
15		Mining companies	Could be area for REDD+	v
16		Palm oil companies	Could be area for REDD+	v
17		Rubber owners	Could be area for REDD+	
18		Cinnamon plantation owners	Could be area for REDD+	
19		Coconut plantation owners	Could be area for REDD+	
20		Ordinary farmers	Could be area for REDD+	
21		Urban citizen	advantage or disadvantage from REDD+	
22		Carbon Broker	Connecting service providers and buyers that make REDD+ work	v
23		Carbon Buyer	Provide demand for REDD+ activities	v
24	NGOs	WARSI	Advocacy for REDD+	v
25		WWF	Advocacy for REDD+	
26		Wetland International	Advocacy for REDD+	
27		SETARA	Advocacy for REDD+	v
28	Universities and research institutes	Jambi University	Academicians to support/oppose REDD+	
29	International agencies/donors	FLEGT office	External support to REDD+ policy or trade	v
30		Australian REDD+ donor	External support to REDD+ policy or trade	