

# Shifting discourse, shifting power: how is climate change mitigation and justice negotiated in Indonesia?

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**World  
Agroforestry  
Centre**



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Working Paper 282



RESEARCH  
PROGRAM ON  
Policies,  
Institutions  
and Markets



Australian Government  
Australian Centre for  
International Agricultural Research



RESEARCH  
PROGRAM ON  
Forests, Trees and  
Agroforestry



**Correct citation:**

Galudra G and Aenunaim. 2018. *Shifting discourse, shifting power: how is climate change mitigation and justice negotiated in Indonesia?* Working Paper 282. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program. DOI: <http://dx.doi.org/10.5716/WP18009.PDF>

Titles in the Working Paper Series aim to disseminate interim results on agroforestry research and practices and stimulate feedback from the scientific community. Other publication series from the World Agroforestry Centre include: Agroforestry Perspectives, Technical Manuals and Occasional Papers.

Published by the World Agroforestry Centre  
Southeast Asia Regional Program  
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Working paper no. 282

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## **Abstract**

Most of the global climate change mitigation discourses are dominated by two contradicting discourses: ecological modernization and the civic environmental discourse. They shape and determine how climate change mitigation practices and justice are governed in Indonesia. Based on discourse analysis, this study aims to explore the relationship between these two prominent discourses, and the way they govern climate change mitigation practices in Indonesia. We hypothesize that climate change mitigation outcomes in Indonesia are not only the result of these co-existing dominant discourses, but also of the collective decision-making and authority of different interest groups across multiple scales of governance. The various interest groups develop new discourses that reshape and redirect national policies. Our analysis suggests that Indonesia's concerns about the carbon market and financial system, along with the newer concerns about forest governance reform and equity and the emergence of new coalitions and their resistance, has led to the plurality of discourses and justice, with potential implications for Indonesia's climate change policies.

**Keywords:** discourse, REDD+, forest policy, justice, polycentric governance

## **Acknowledgements**

This research was supported by the Australian Centre for International Agricultural Research (ACIAR), the Research programs on Forests, Trees and Agroforestry (FTA) and Policies, Institutions, and Markets (PIM) of the Consultative Group on International Agricultural Research (CGIAR).

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# 1 Introduction

## 1.1 Objective

Efforts to reduce emissions from deforestation and forest degradation have affected forest governance in developing countries. Knowledge of the science of climate change may steer the conduct of actors who have an interest in forests. However, many scholars fear that the implementation of emission reduction through this science will cause recentralised forest governance, a lack of engagement with local communities in decision-making and forest benefits, a loss of both customary tenure and use rights for local populations, and exhibit a lack of respect for local culture and knowledge (Lyster 2011). In the end, it would cause further social conflict and community impoverishment. As a response, many scholars emphasize the importance of justice and equity in climate change mitigation efforts and discourses (McDermott et al. 2013; Schlosberg 2013). Consequently, not only is science steering actors' conduct in relation to forests, but also the issues of equity and justice are determining how governments govern their forests (Preston et al. 2014).

Backstrand and Lovbrand (2006) describe the competing discourses that shape and influence the climate change policy and practice. These discourses are green governmentality, ecological modernization and civic environmentalism. There is a need to examine how the issues of equity and justice are being addressed by these three competing discourses. Schlosberg (2004, 2007) classifies justice as including equity in the distribution of environmental risks and benefits, recognition of the diversity of participants and the experiences of affected communities, and participation in the political processes which create and manage environmental policy. However, the classification of justice is a contested concept, with multiple definitions (Schlosberg 2004, 2007, 2013, Schroeder and McDermott 2014). Schlosberg (2014) describes environmental justice as a social movement that influences the way that climate change mitigation action is conceptualized.

This study addresses the question: how is justice addressed by current national and sub-national discourses, policies and legislation in Indonesia, and how should it be addressed in a transformative agenda? This question has the following sub-questions:

1. What are the effects of the dominant global climate change mitigation discourses on national discourse?
2. How are justice discourses conceptualized and manifested in the national climate change mitigation discourse? How they are contested and negotiated by different actors?

## 1.2 Transformation to inclusive development: discourse, governmentality and justice

Through the perspective of discourse analysis, transformation could be achieved when the actors' coalitions are formed, and the tensions and struggle between them have emerged, creating a new subject of discourse (Feindt and Oels 2005). The process of transformation requires an understanding of how the different discourses compete, and how they are integrated into the forest institution. It also requires an understanding of how they are being transformed into policy instruments and consolidated into practice (Backstrand and Lovbrand 2006).

Not all coalitions of each discourse support transformation. Transformation requires different sets of discourses that reflect the ideas of policy reform, governance and institutional change, and challenge existing power relationships. The versions of discourses that lead to transformation are reflexive green governmentality, strong ecological modernization and radical civic environmentalism (de Gregorio et al 2015). In this case, transformation requires a shift in the established discourses, which depends on new knowledge, as well as an understanding of existing government structures and institutional rules and past experiences (both historic and recent) that govern forest values and norms.

Social movement on the issue of justice shapes and influences the way climate change mitigation is put into practice (Schlosberg 2014). Several scholars have identified three global climate justice discourses: North-South duality (entitlements and duties regarding development, national sovereignty, rights to development), vulnerability (the urgency and moral importance of actions to mitigate and adapt), and transition (common but differentiated responsibilities, sharing the cost of mitigating climate change through a process of global low-carbon growth). However, justice in climate change can also be framed according to the competing environmental discourses and historical norms of particular geographic locations. Therefore, there is a need to analyze how the climate change justice discourse is manifested within the environmental discourse (Backstrand and Lovbrand 2006) at the national and sub-national levels.

We analysed the climate justice discourses using a social environmental justice framework (Schlosberg 2007, 2015, Sikor et al 2014). This framework includes distribution (the way costs and benefits are allotted among people and groups with competing claims), participatory and procedural decision-making (recognition of competing ideas and interests, and inclusion of these in the process of decision-making, covering the ability to participate, the distribution of power, and the rules of decision-making) and recognition (acknowledgement of people's ideas, cultures and histories, and avoidance of bias toward statutory norms) (Schlosberg 2007, Sikor et al 2014). This environmental justice framework is used to analyze how the dynamics of climate change discourse and climate change mitigation policies influence the practice of justice.

Based on the framework above, we argue that combining the concepts of environmental and justice discourses is needed to understand the evolving climate change discourses at national and sub-national levels, as well as their contestations, and how they influence forest policy and governance. Table 1 illustrates how environmental discourses differentiate between policy instruments, shape and

influence climate change mitigation practices and justice, and whether they support business as usual or transformation.

**Table 1.** The influence of environmental discourses on climate change mitigation and justice mechanisms

Discourse	Version	Definition	Climate change mitigation mechanism	Justice mechanism	Business as usual or transformational change
Green governmentality		Science-driven, characterized by centralized, top-down decisions.	Standardized measurement techniques and verification schemes.	Development of community institutions to participate in carbon monitoring.	Business as usual
	Reflexive	Acknowledges local complexities and includes local actors in the creation of a just and credible institution.	Respect for local knowledge and rights.	Forest reform to ensure the just distribution of carbon rights.	Transformational change
Ecological modernization	Weak	Technocratic problem solving aimed at meeting economic and ecological goals.	Emissions market and trade to minimize the costs.	Minimization of the risk to people's livelihoods: resettlement, compensation, partial use rights.	Business as usual
	Strong	Democratic decision-making and institutional structures encouraging meaningful participation by societal actors.	Co-benefits such as poverty alleviation and local socio-economic improvement.	Prevent people's livelihoods from harm: avoiding deprivation, displacement and marginalization through mechanisms such as land tenure reform and customary land maps.	Transformational change
Civic environmentalism/ inclusive development	Reformist	The vital force of a transnational civil society between NGOs, businesses and governments can increase the public accountability and legitimacy of environmental problem-solving.	Public deliberation by all relevant stakeholders.	Full rights and responsibilities such as participation, transparency and accountability, and free, prior and informed consent (FPIC).	Business as usual
	Radical	Challenges unequal power structures, free trade and market liberalization, and advocates a more just world order.	Giving greater autonomy and power to local communities.	Recognition of the sovereignty of indigenous people's rights.	Transformational change

Sources: Aicher (2014); Arhin (2014); Backstrand and Lovbrand (2006); De Gregorio et al (2015);

The table shows that the transformational discourses such as strong ecological modernization and reflexive green governmentality are influenced by civic environmentalism. Nevertheless, they have different scales of influence in the transformation of forest governance and the implementation of

justice in the context of climate change mitigation action. Reflexive green governmentality and radical civic environmentalism challenge the existing forest governance on tenure, the difference being that the former discourse aims to reform forest tenure in relation to carbon rights (who should get how much, and at whose cost) (Greenleaf 2010), while the latter discourse challenges the existing forest governance by romanticizing the sovereignty of indigenous and local people based on their wisdom, knowledge and practices (Shankland and Hesenclever 2011). On the other hand, the strong ecological modernization discourse focuses on promoting and improving communities' livelihoods within the context of 'co-benefits'. Any interventions for climate change mitigation must consider how they will improve forest communities' livelihoods and biodiversity (Arhin 2014).

The reform version of the civic environmentalism discourse promotes procedural justice such as community participation in decision-making processes, transparency and accountability. Procedural justice in climate change mitigation is being put into practice as free prior and informed consent (FPIC) (Arhin 2014, Aicher 2014). However, this discourse only sustains and strengthens the existing forest governance, and institutional rules such as corporate-community partnerships (de Gregorio et al 2015). Other discourses, such as weak ecological modernization and green governmentality, also have some elements of justice, but with only limited community participation in decision-making. Green governmentality gives communities roles only in measuring and verifying the carbon sink, while weak ecological governmentality focuses on strong collaboration between global institutions and national government sovereignty. Here, the manifestation of this discourse is effective law enforcement (Hiraldo and Tanner 2011), and local communities only receive compensation, relocation or partial rights (Arhin 2014).

## **2 Methods and Study Area**

Indonesia has the highest rate of forest cover loss in the world, estimated at 840,000 ha annually for primary forests. This loss is attributed domestically to poor forest and land governance. Indonesia's national commitment is to reduce its emissions by 29% through state budgets, and by a further 41% through bilateral agreements, by 2030. The INDC report details national emission reduction targets and programmes, as well as the national strategy for emission reduction actions. However, most of these actions are planned to achieve the emission reduction targets based on scientific and political economy rationalities and lack an understanding of how justice shapes and influences climate change mitigation in practice.

We interviewed around 18 participants who work with emission reduction policies and practices. These experts are mainly: ex-REDD Agency members, ex-Climate Change National Council (DNPI) members, national and international NGOs, and university academicians. We also selected five government officers from the Ministry of Environment and Forestry (MoEF) and National Planning and Development Agency (BAPPENAS).

The interviews were divided into two sessions. In the first session, we asked these experts and government officers to identify: (i) major activities that directly contribute deforestation, forest degradation and the destruction of peatlands in Indonesia, (ii) solutions to reduce the impact of these causes, (iii) policy interventions and practices that are most likely to halt or minimize deforestation, forest degradation and the destruction of peatlands. In the second session, we asked them about: (i) their understanding of justice and equity in climate change mitigation practices, and (ii) how their policy instruments and practices will determine social justice outcomes.

We also selected 11 participants from two working groups in Jambi: the Provincial Committee of REDD+ (KOMDA REDD+) and the Provincial Action Plan for Gashouse Emission Reduction Team (RAD-GRK). These groups consist of provincial government officers, NGOs and academicians. The difference between these working groups is that the former group works to implement the REDD+ scheme. They work under the Economic Affairs Unit at the Governor Office of Jambi. While the latter group works to implement the NAMA's scheme under the coordination of Provincial Planning and Development Agency (BAPPEDA). Despite this, both of them work to achieve the national emission reduction of 26% (now, under the National Determined Commitment (NDC), around 29% by 2030), however there are uncertainties as to how they will work together and consolidate their objectives in practice.

## 3 Results

This section is about how the existing discourses are conceptualized and manifested in climate change mitigation and justice in Indonesia. The existing discourses shape and determine Indonesia's national debate on two topics: i) drivers of deforestation, and ii) policy instruments. Here, we argue that these topics affect the way justice is put into practice.

### 3.1 Drivers of deforestation: understanding the scale and magnitude

Table 2 divides deforestation into planned and unplanned. The cause of the deforestation determines the way it can be solved and minimized. Based on interviews and discussions, the problem and its solutions can be divided into three aspects. First, global demand provides the motivation to exploit the forest. As this is regarded as planned deforestation, especially in terms of state legality, most of the civil society members tried to promote value chain certification to ensure business concession commitments to emission reduction. Others advocated 'good governance' indicators to measure and monitor the forest governance processes.

The second aspect deals with restoring and rehabilitating forest functions. This is combined with law enforcement. Unlike the first aspect, law enforcement deals with illegal logging and 'illegal' forest occupiers, and mostly relies on force and punishment.

The third aspect focuses on protecting the rights of marginalized groups. It promotes providing more opportunities for the local communities to manage the forest, which will help to minimize carbon emissions and halt deforestation. Based on this premise, several instruments were developed to ensure local and indigenous communities are involved in forest management, including in land tenure conflict resolution, indigenous people recognition and reform of forest bureaucracy and procedures for community-based forest management.

**Table 2.** The drivers of deforestation

Drivers of deforestation		Solutions
Planned deforestation (direct deforestation)	<ul style="list-style-type: none"> <li>• Global demand for timber, including licensing for forest conversion.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote HCVF/High Carbon Stock (HCS) in timber/oil palm certification; protect the remaining forests in business concessions.</li> <li>• Enhance the capacity to monitor business land use management through government regulations such Environmental Impact Assessment (EIA), Sustainable Forest Production Management (PHPL) and Strategic Environment Assessment (SEA).</li> <li>• Transparency and accountability in forest and land use licensing processes.</li> <li>• Develop a carbon market and incentives for best forest management practices.</li> </ul>
Unplanned deforestation (direct deforestation)	<ul style="list-style-type: none"> <li>• Communities' slash and burn/forest fires</li> <li>• Illegal logging</li> <li>• Land occupation</li> </ul>	<ul style="list-style-type: none"> <li>• Restore degraded peatland</li> <li>• Law enforcement</li> </ul>
Unplanned deforestation (indirect deforestation)	<ul style="list-style-type: none"> <li>• Weak forest governance</li> <li>• Weak licensing monitoring process</li> <li>• Weak forest land tenure system including customary rights</li> <li>• Weak law enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• FPIC</li> <li>• Recognition of indigenous/ communal rights</li> <li>• Forest and land tenure conflict resolution and mediation</li> </ul>

Sources: interviews and discussions

## 3.2 Policy instruments: understanding the purpose and problems

Table 3 illustrates that, in general, there are three separate but complementary policy instruments that are being discussed in emission reduction debates. The first is about the forest moratorium and the process of one map policy. It is derived from the perspective that the target of emission reduction should not impede the progress of development. This policy instrument complements the second policy instrument of measurement, reporting and verification (MRV) through the National/Local Action Plan for GHG reduction (RAN/D-GRK). Spatial planning policy can be used as the means to integrate development planning with forest moratorium maps, with the purpose of developing emission reduction action plans in line with national and regional economic development plans.

However, there is the problem of how to monitor the progress of emission reduction currently committed to by different stakeholders (government agencies, business concessions and civil societies). The activities that dominate the RAN/D-GRK policy are reforestation and forest rehabilitation. These activities were planned simply because (i) it easy to measure carbon and accounting to support carbon enhancement, (ii) they are already being funded through the existing annual state budget, and (iii) it is easy to monitor and to ensure the communities' involvement as labour in planting and preservation. This means that emission reduction activities are limited only to forest replantation. It also gives corporations such as pulp and paper plantations an avenue to claim that their activities in converting degraded forest to pulp and paper plantation are in line with the carbon stock enhancements and emission reduction targets that have been set by the government.

The actions to support the policy instruments are related to both direct and indirect deforestation. In the governance reform movement by the civil societies, the target of reform is the due diligence of business corporate concessions. Some NGOs are working with the concessions to insert indicators of high carbon stock (HCS) and high conservation value (HCV) into the certification mechanism. Others advocate assessment of the government documents regarding concessions plans, as part of government transparency and accountability.

**Table 3.** Policy instruments and their challenges in emission reduction in Indonesia

Policy instruments	Purpose	Challenges in relation to emission reduction
Manifested forest moratorium to one map policy to visualize forest permits and forest cover	<ul style="list-style-type: none"> <li>Develop development planning and permits that ensure protected forest areas.</li> <li>Reduce overlapping permits and forest tenure problems.</li> </ul>	<ul style="list-style-type: none"> <li>The forest moratorium only protects forest that has already been protected within state regulations, such as for forest conservation.</li> <li>Never goes beyond forest boundaries.</li> <li>Does not control forest communities' area claims.</li> </ul>
Measurement, reporting and verification (MRV) through the National/Local Action Plan for GHG reduction (RAN/D-GRK)	<ul style="list-style-type: none"> <li>A guideline for multiple stakeholders to ensure development planning meets emission reduction targets.</li> </ul>	<ul style="list-style-type: none"> <li>As it was mandated by the National Planning and Development Agency (BAPPENAS) through spatial planning, the debate focuses mainly on planning and the uncertainty of how to develop the monitoring system.</li> <li>Uncertain whether private sectors are willing to support the emission reduction targets.</li> <li>Uncertain on the agreed reference emission level (REL) and on how to monitor performance.</li> </ul>

Policy instruments	Purpose	Challenges in relation to emission reduction
		<ul style="list-style-type: none"> <li>Jurisdictional approach is required to get all actors' support, but as it is embedded in the spatial planning which focuses on development, emission reduction activities may be sacrificed.</li> </ul>
Embedded in the governance reform movement (REDD+ co-benefits/safeguards)	<ul style="list-style-type: none"> <li>Considers emissions reductions beyond carbon, including enhancement of biodiversity, alleviation of poverty, improvement of local livelihoods, improvement of forest governance and protection of rights.</li> <li>Applies to the ongoing practice of governance such as timber certification and SEA.</li> </ul>	<ul style="list-style-type: none"> <li>The co-benefits may require not only governance reform but also skill enhancement and knowledge improvement.</li> <li>Reform change needs to be done at multiple levels of governance (national, provincial, district and village level).</li> </ul>

Sources: interviews and discussions

## 4 Discussion and Conclusions

Climate change mitigation discourse is a newly dominant global discourse that shapes and determines the way policies and regulations are implemented in different countries. Deforestation and forest degradation have been determined as one of the causes of global warming. At the beginning of REDD+ introduction, the focus was mainly on the scientific basis of how to measure and monitor carbon accounting, and use of payment for any carbon reductions (like payments for environmental services). Local communities were better able to measure and monitor carbon emissions and storage. This has been institutionalized through existing community forestry schemes, and communities are receiving benefits for their efforts. These benefits can be divided into monetary and non-monetary benefits such as livelihood capacity development. In this case, justice covers how local communities can receive fair benefits, the benefits distribution mechanism and the issue of carbon rights. The issue of justice also covers procedures such as FPIC to ensure that local communities participate in the decision-making process as well as to avoid the possibility of elite capture. Clarity on forest tenure is necessary to ensure that benefits are justly distributed to the rights-holders.

When the issue of climate change mitigation efforts met with the forest tenure reform discourse, the issue of carbon rights shifted from the issue of the distribution mechanism to the issue of recognition. Indigenous and local people's rights over the forest are being marginalized within state laws. FPIC is designed to cover whether or not local people have claims over the forest. Forest tenure conflict resolution is being designed to ensure that the local and indigenous people's rights are not being marginalized. The rights issue is the main focus of climate change mitigation actions.

The plurality and shifting of discourse and justice in this context comes from several aspects. First, there are some doubts about how the REDD+ financial scheme will convince communities to participate in forest management. The REDD+ financial scheme can be easily implemented in protected forests but may have some difficulties when it is implemented in areas of other land use, such as production forests. Traditional knowledge held by the adat institution was proposed to show



that the adat institution has the ability to conserve the forest. Together with the REDD+ financial scheme, this marks the ‘green grab’ in the name of indigenous people’s rights. However, this may create frictions within the communities who have different interests and needs besides conserving the forest. Especially, in terms of legality, forest exploitation being allowed in production forests, which may endanger the forest conservation priorities of the REDD+ scheme.

Second, the forest land rights and licenses are mainly given to business concessions while only a small fraction of forests are given to the local communities. The inequality of forest allocation forces the government to give forest land to the local communities. In the recent national mid-term development planning (RPJMN), the government stated that their target is to allocate forest land of around 12.7 million ha to local communities by 2019. Several regulations are being introduced to accelerate the forest land allocation, such as the reduction of bureaucratic procedures for community forestry licensing and modules to resolve forest conflicts inside the forest.

## References

- Aicher C. 2014. Discourse practices in environmental governance: social and ecological safeguards of REDD. *Biodiversity Conservation* 23:3543–3560
- Arhin AA. 2014. Safeguards and dangerguards: A framework for unpacking the black box of safeguards for REDD+. *Forest Policy and Economics* 45: 24–31
- Backstrand K and Lovbrand E. 2006. Planting trees to mitigate climate change: Contested discourses of ecological modernization, green governmentality and civic environmentalism. *Global Environmental Politics* 6:1
- Feindt PH and Oels A. 2005. Does discourse matter? Discourse analysis in environmental policy making, *Journal of Environmental Policy & Planning* 7:3, 161-173
- Greenleaf M. 2010. Using Carbon Rights to Curb Deforestation and Empower Forest Communities. *NYU Env'tl. LJ*, 18, 507.
- Hirald R and Tanner T. 2011. *The global political economy of REDD+: Engaging Social Dimensions in the Emerging Green Economy*. UNRISD Occasional Paper: Social Dimensions of Green Economy and Sustainable Development No. 4
- Lyster R. 2011. REDD+, transparency, participation and resource rights: the role of law. *Environmental Science and Policy* 14(2): 118–126
- McDermott CL, Coad L, Helfgott A, Schroeder H. 2012. Operationalizing social safeguards in REDD+: actors, interests and ideas. *Environmental Science & Policy* 21: 63-72
- Preston I, Banks N, Hargreaves K, Kazmierczak A, Lucas K, Mayne R, Downing C, Street R. 2014. *Climate change and social justice: an evidence review*. York: Joseph Rowntree Foundation
- Schlosberg D. 2004. Reconceiving environmental justice: Global movements and political theories. *Environmental Politics* 13(3): 517-540
- Schlosberg D. 2013. Theorising environmental justice: The expanding sphere of a discourse. *Environmental Politics* 22(1): 37-55
- Schlosberg D and Collins LB. 2014. *From environmental to climate justice: climate change and the discourse of environmental justice*. WIREs Climate Change
- Schroeder H and McDermott C. 2014. Beyond carbon: enabling justice and equity in REDD+ across levels of governance. *Ecology and Society* 19(1): 31
- Shankland A and Hasenclever L. 2011. *Indigenous peoples and the regulation of REDD+ in Brazil: Beyond the war of the worlds?* IDS Bulletin 42(3)

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49. Land tenure and management in the districts around Mt Elgon: An assessment presented to the Mt Elgon ecosystem conservation programme.
50. The production and marketing of leaf meal from fodder shrubs in Tanga, Tanzania: A pro-poor enterprise for improving livestock productivity.
51. Buyers Perspective on Environmental Services (ES) and Commoditization as an approach to liberate ES markets in the Philippines.

52. Towards Towards community-driven conservation in southwest China: Reconciling state and local perceptions.
53. Biofuels in China: An Analysis of the Opportunities and Challenges of *Jatropha curcas* in Southwest China.
54. *Jatropha curcas* biodiesel production in Kenya: Economics and potential value chain development for smallholder farmers
55. Livelihoods and Forest Resources in Aceh and Nias for a Sustainable Forest Resource Management and Economic Progress
56. Agroforestry on the interface of Orangutan Conservation and Sustainable Livelihoods in Batang Toru, North Sumatra.

## 2008

57. Assessing Hydrological Situation of Kapuas Hulu Basin, Kapuas Hulu Regency, West Kalimantan.
58. Assessing the Hydrological Situation of Talau Watershed, Belu Regency, East Nusa Tenggara.
59. Kajian Kondisi Hidrologis DAS Talau, Kabupaten Belu, Nusa Tenggara Timur.
60. Kajian Kondisi Hidrologis DAS Kapuas Hulu, Kabupaten Kapuas Hulu, Kalimantan Barat.
61. Lessons learned from community capacity building activities to support agroforest as sustainable economic alternatives in Batang Toru orang utan habitat conservation program (Martini, Endri et al.)
62. Mainstreaming Climate Change in the Philippines.
63. A Conjoint Analysis of Farmer Preferences for Community Forestry Contracts in the Sumber Jaya Watershed, Indonesia.
64. The highlands: a shared water tower in a changing climate and changing Asia
65. Eco-Certification: Can It Deliver Conservation and Development in the Tropics.
66. Designing ecological and biodiversity sampling strategies. Towards mainstreaming climate change in grassland management.
67. Towards mainstreaming climate change in grassland management policies and practices on the Tibetan Plateau
68. An Assessment of the Potential for Carbon Finance in Rangelands
69. ECA Trade-offs Among Ecosystem Services in the Lake Victoria Basin.
69. The last remnants of mega biodiversity in West Java and Banten: an in-depth exploration of RaTA (Rapid Land Tenure Assessment) in Mount Halimun-Salak National Park Indonesia
70. Le business plan d'une petite entreprise rurale de production et de commercialisation des plants des arbres locaux. Cas de quatre pépinières rurales au Cameroun.
71. Les unités de transformation des produits forestiers non ligneux alimentaires au Cameroun. Diagnostic technique et stratégie de développement Honoré Tabuna et Ingratia Kayitavu.
72. Les exportateurs camerounais de safou (*Dacryodes edulis*) sur le marché sous régional et international. Profil, fonctionnement et stratégies de développement.
73. Impact of the Southeast Asian Network for Agroforestry Education (SEANAFE) on agroforestry education capacity.
74. Setting landscape conservation targets and promoting them through compatible land use in the Philippines.
75. Review of methods for researching multistrata systems.

76. Study on economical viability of *Jatropha curcas* L. plantations in Northern Tanzania assessing farmers' prospects via cost-benefit analysis
77. Cooperation in Agroforestry between Ministry of Forestry of Indonesia and International Center for Research in Agroforestry
78. "China's bioenergy future. an analysis through the Lens if Yunnan Province
79. Land tenure and agricultural productivity in Africa: A comparative analysis of the economics literature and recent policy strategies and reforms
80. Boundary organizations, objects and agents: linking knowledge with action in Agroforestry watersheds
81. Reducing emissions from deforestation and forest degradation (REDD) in Indonesia: options and challenges for fair and efficient payment distribution mechanisms

## 2009

82. Mainstreaming climate change into agricultural education: challenges and perspectives
83. Challenging conventional mindsets and disconnects in conservation: the emerging role of eco-agriculture in Kenya's landscape mosaics
84. Lesson learned RATA garut dan bengkuntat: suatu upaya membedah kebijakan pelepasan kawasan hutan dan redistribusi tanah bekas kawasan hutan
85. The emergence of forest land redistribution in Indonesia
86. Commercial opportunities for fruit in Malawi
87. Status of fruit production processing and marketing in Malawi
88. Fraud in tree science
89. Trees on farm: analysis of global extent and geographical patterns of agroforestry
90. The springs of Nyando: water, social organization and livelihoods in Western Kenya
91. Building capacity toward region-wide curriculum and teaching materials development in agroforestry education in Southeast Asia
92. Overview of biomass energy technology in rural Yunnan (Chinese – English abstract)
93. A pro-growth pathway for reducing net GHG emissions in China
94. Analysis of local livelihoods from past to present in the central Kalimantan Ex-Mega Rice Project area
95. Constraints and options to enhancing production of high quality feeds in dairy production in Kenya, Uganda and Rwanda

## 2010

96. Agroforestry education in the Philippines: status report from the Southeast Asian Network for Agroforestry Education (SEANAFE)
97. Economic viability of *Jatropha curcas* L. plantations in Northern Tanzania- assessing farmers' prospects via cost-benefit analysis.
98. Hot spot of emission and confusion: land tenure insecurity, contested policies and competing claims in the central Kalimantan Ex-Mega Rice Project area
99. Agroforestry competences and human resources needs in the Philippines
100. CES/COS/CIS paradigms for compensation and rewards to enhance environmental Services

101. Case study approach to region-wide curriculum and teaching materials development in agroforestry education in Southeast Asia
102. Stewardship agreement to reduce emissions from deforestation and degradation (REDD): Lubuk Beringin's Hutan Desa as the first village forest in Indonesia
103. Landscape dynamics over time and space from ecological perspective
104. Komoditisasi atau koinvestasi jasa lingkungan: skema imbal jasa lingkungan program peduli sungai di DAS Way Besai, Lampung, Indonesia
105. Improving smallholders' rubber quality in Lubuk Beringin, Bungo district, Jambi province, Indonesia: an initial analysis of the financial and social benefits
106. Rapid Carbon Stock Appraisal (RACSA) in Kalahan, Nueva Vizcaya, Philippines
107. Tree domestication by ICRAF and partners in the Peruvian Amazon: lessons learned and future prospects in the domain of the Amazon Initiative eco-regional program
108. Memorias del Taller Nacional: "Iniciativas para Reducir la Deforestación en la region Andino - Amazónica", 09 de Abril del 2010. Proyecto REALU Peru
109. Percepciones sobre la Equidad y Eficiencia en la cadena de valor de REDD en Perú –Reporte de Talleres en Ucayali, San Martín y Loreto, 2009. Proyecto REALU-Perú.
110. Reducción de emisiones de todos los Usos del Suelo. Reporte del Proyecto REALU Perú Fase 1
111. Programa Alternativas a la Tumba-y-Quema (ASB) en el Perú. Informe Resumen y Síntesis de la Fase II. 2da. versión revisada
112. Estudio de las cadenas de abastecimiento de germoplasma forestal en la amazonía Boliviana
113. Biodiesel in the Amazon
114. Estudio de mercado de semillas forestales en la amazonía Colombiana
115. Estudio de las cadenas de abastecimiento de germoplasma forestal en Ecuador  
<http://dx.doi.org/10.5716/WP10340.PDF>
116. How can systems thinking, social capital and social network analysis help programs achieve impact at scale?
117. Energy policies, forests and local communities in the Ucayali Region, Peruvian Amazon
118. NTFPs as a Source of Livelihood Diversification for Local Communities in the Batang Toru Orangutan Conservation Program
119. Studi Biodiversitas: Apakah agroforestry mampu mengkonservasi keanekaragaman hayati di DAS Konto?
120. Estimasi Karbon Tersimpan di Lahan-lahan Pertanian di DAS Konto, Jawa Timur
121. Implementasi Kaji Cepat Hidrologi (RHA) di Hulu DAS Brantas, Jawa Timur.  
<http://dx.doi.org/10.5716/WP10338.PDF>
122. Kaji Cepat Hidrologi di Daerah Aliran Sungai Krueng Peusangan, NAD, Sumatra  
<http://dx.doi.org/10.5716/WP10337.PDF>
123. A Study of Rapid Hydrological Appraisal in the Krueng Peusangan Watershed, NAD, Sumatra.  
<http://dx.doi.org/10.5716/WP10339.PDF>

## 2011

124. An Assessment of farm timber value chains in Mt Kenya area, Kenya
125. A Comparative financial analysis of current land use systems and implications for the adoption of improved agroforestry in the East Usambaras, Tanzania
126. Agricultural monitoring and evaluation systems

127. Challenges and opportunities for collaborative landscape governance in the East Usambara Mountains, Tanzania
128. Transforming Knowledge to Enhance Integrated Natural Resource Management Research, Development and Advocacy in the Highlands of Eastern Africa  
<http://dx.doi.org/10.5716/WP11084.PDF>
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130. Carbon forestry projects in the Philippines: potential and challenges. The Arakan Forest Corridor forest-carbon project. <http://dx.doi.org/10.5716/WP11055.PDF>
131. Carbon-forestry projects in the Philippines: potential and challenges. The Laguna Lake Development Authority's forest-carbon development project.  
<http://dx.doi.org/10.5716/WP11056.PDF>
132. Carbon-forestry projects in the Philippines: potential and challenges. The Quirino forest-carbon development project in Sierra Madre Biodiversity Corridor  
<http://dx.doi.org/10.5716/WP11057.PDF>
133. Carbon-forestry projects in the Philippines: potential and challenges. The Ikalahan Ancestral Domain forest-carbon development <http://dx.doi.org/10.5716/WP11058.PDF>
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<http://dx.doi.org/10.5716/WP11232.PDF>
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138. Does value chain development contribute to rural poverty reduction? Evidence of asset building by smallholder coffee producers in Nicaragua  
<http://dx.doi.org/10.5716/WP11271.PDF>
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140. Impact of fertilizer trees on maize production and food security in six districts of Malawi.  
<http://dx.doi.org/10.5716/WP11281.PDF>

## 2012

141. Fortalecimiento de capacidades para la gestión del Santuario Nacional Pampa Hermosa: Construyendo las bases para un manejo adaptativo para el desarrollo local. Memorias del Proyecto. <http://dx.doi.org/10.5716/WP12005.PDF>
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147. Policy incentives for scaling up conservation agriculture with trees in Africa: the case of Tanzania, Kenya, Ghana and Zambia <http://dx.doi.org/10.5716/WP12050.PDF>
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150. Assessment of the uThukela Watershed, Kwazulu. <http://dx.doi.org/10.5716/WP12161.PDF>
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156. Agroforestry and Forestry in Sulawesi series: Livelihood strategies and land use system dynamics in Southeast Sulawesi. <http://dx.doi.org/10.5716/WP12055.PDF>
157. Agroforestry and Forestry in Sulawesi series: Profitability and land-use systems in South and Southeast Sulawesi. <http://dx.doi.org/10.5716/WP12056.PDF>
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160. Agroforestry and Forestry in Sulawesi series: Rapid market appraisal of agricultural, plantation and forestry commodities in South and Southeast Sulawesi. <http://dx.doi.org/10.5716/WP12059.PDF>

## 2013

161. Diagnosis of farming systems in the Agroforestry for Livelihoods of Smallholder farmers in Northwestern Viet Nam project <http://dx.doi.org/10.5716/WP13033.PDF>
162. Ecosystem vulnerability to climate change: a literature review. <http://dx.doi.org/10.5716/WP13034.PDF>
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165. Seri Agroforestri dan Kehutanan di Sulawesi: Mata pencaharian dan dinamika sistem penggunaan lahan di Sulawesi Tenggara <http://dx.doi.org/10.5716/WP13041.PDF>
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168. Seri Agroforestri dan Kehutanan di Sulawesi: Kebutuhan penyuluhan agroforestri pada tingkat masyarakat di lokasi proyek AgFor di Sulawesi Selatan dan Tenggara, Indonesia.  
<http://dx.doi.org/10.5716/WP13044.PDF>
169. Seri Agroforestri dan Kehutanan di Sulawesi: Laporan hasil penilaian cepat untuk komoditas pertanian, perkebunan dan kehutanan di Sulawesi Selatan dan Tenggara  
<http://dx.doi.org/10.5716/WP13045.PDF>
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## 2014

177. Are trees buffering ecosystems and livelihoods in agricultural landscapes of the Lower Mekong Basin? Consequences for climate-change adaptation. <http://dx.doi.org/10.5716/WP14047.PDF>
178. Agroforestry, livestock, fodder production and climate change adaptation and mitigation in East Africa: issues and options. <http://dx.doi.org/10.5716/WP14050.PDF>
179. Trees on farms: an update and reanalysis of agroforestry's global extent and socio-ecological characteristics. <http://dx.doi.org/10.5716/WP14064.PDF>
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184. Seri Agroforestri dan Kehutanan di Sulawesi: Kuantifikasi jasa lingkungan air dan karbon pola agroforestri pada hutan rakyat di wilayah sungai Jeneberang
185. Options for Climate-Smart Agriculture at Kaptumo Site in Kenya <http://dx.doi.org/10.5716/WP14394.PDF>

## 2015

186. Agroforestry for Landscape Restoration and Livelihood Development in Central Asia  
<http://dx.doi.org/10.5716/WP14143.PDF>

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219. Land-use/cover change in Ho Ho Sub-watershed, Ha Tinh Province, Vietnam. <http://dx.doi.org/10.5716/WP15730.PDF>

## 2016

220. Agroforestry and Forestry in Sulawesi series: Evaluation of the Agroforestry Farmer Field Schools on agroforestry management in South and Southeast Sulawesi, Indonesia. <http://dx.doi.org/10.5716/WP16002.PDF>
221. Farmer-to-farmer extension of livestock feed technologies in Rwanda: A survey of volunteer farmer trainers and organizations. <http://dx.doi.org/10.5716/WP16005.PDF>
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