

EVALUATING PLANNING FOR INTEGRITY-BASED FOREST MANAGEMENT (INFORM)

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OVERVIEW

Primary and other natural forest loss and degradation continue to increase, especially in the tropics,¹⁻³ despite increasing recognition of the importance and significant value of the carbon and multiple other benefits provided by forests, and especially primary forests.^{4,5} Effective protection and management of forests at a landscape level are key activities within global efforts to address the climate emergency and the biodiversity crisis.

Recently, Morgan et al. outlined the Three Pillars Framework for Integrity-based Forest Management (INFORM) to synthesise and simplify the multitude of integrated landscape approaches to forest management.^{6,7} The three pillars – *ecosystem integrity*, *effective planning* and *strong governance* – are essential components to ensure both healthy forest ecosystems and sustainable, just and legitimate management of the landscape. Evaluating landscape approaches requires activities, policies and strategies that address all three pillars.

The first pillar, Ecosystem Integrity, underpins the basis of landscape management. Ecosystem integrity creates the stocks and flows of ecosystem services in forest landscapes. Maintaining and evaluating ecosystem integrity is the basis of the sustainable management of landscapes, and while planning and governance focus more on people and decision-making, they should be carried out with ecosystem integrity at their centre.

The key role of effective planning, the second pillar, is to bring the necessary knowledge about ecosystem integrity into decisions about land

uses and activities, alongside local knowledge and values. It also provides the link between ecosystem integrity and the governance of ‘how’ decisions are made and implemented. Effective planning can link activities on-the-ground to national and regional goals and priorities, while at the same time supporting communities to take control of decision-making to help them achieve success

A significant challenge, however, is to develop and evaluate planning in contexts where there is limited technical capacity, while avoiding a top-down approach that imposes inappropriate, unrealistic or unfair requirements and limitations on local communities and stakeholders.

The purpose of this policy brief is to highlight a framework for evaluating the *effective planning* pillar to support better landscape approaches. The brief summarises the importance of planning for landscape management, the basis of the framework and, importantly, how it can be used. The evaluation framework – outlined in Morgan et al. (2022) ‘**Evaluating planning without plans: Principles, criteria and indicators for effective forest landscape approaches**’¹⁸ – provides the basis for consistent evaluation of participatory planning across the highly varied forest landscapes found around the world, even in contexts where planning is informal or formal planning processes are limited or nascent. The framework is designed to be straightforward enough to allow for evaluation in contexts with limited resources and capacity, such as tropical forest communities in developing countries, but also flexible enough to accommodate the development of more rigorous and complex evaluations.




Principles	Criteria	Indicators
 <p>Shared Learning</p>	Knowledge integration	Knowledge sharing
		Uncertainty
	Shared Understanding	Knowledge generation
		Identifying drivers of change
 <p>Holistic Integration</p>	Coordination	Reflection
		Feedback
		Issue identification
	Collaboration	Capacity matched to responsibility
		Clear Responsibility
		Identifying stakeholders
 <p>Situated Justice</p>	Improved Capabilities	Agreed objectives
		Interpersonal interactions
	Accessibility	Capacities
		Options
		Openness
		Answerability

Figure 1. Principles, criteria and indicators for evaluating effective planning in Integrity based Forest Landscape Management under the Three Pillars Approach.

BACKGROUND

Forests, and especially primary forests, provide vital ecosystem services on a global, regional and local scale (see Box 1).^{5,9} They hold major carbon stocks that are an essential part of the response to the climate emergency.^{4,10,11} Forests are also major reservoirs of biodiversity (providing habitats for 80% of amphibian species, 75% of bird species and 68% of mammal species, and 60% of all vascular plants are found in tropical forests).^{3,12,13} Forests maintain regional level climate and water processes,^{9,14,15} which in turn are fundamental to preserving carbon and biodiversity, for maintaining productivity and providing clean water for downstream use. The recent pandemic has also brought back into focus how forest loss significantly increases the risk of animal-to-human transfer of novel diseases and future pandemics.¹⁶

Despite this, forest loss and degradation are continuing globally and loss of primary forest is particularly acute,^{1,2,17,18} commonly driven by industrial exploitation by logging, mining and clearing for agriculture.^{19,20} In response, there is a need for forest and land management that better recognises and reflects the complexity and multiple benefits of forest landscapes.

Importantly, forests are also the traditional territories of many Indigenous Peoples and home to local communities that use forests for food, fibre and fuel,^{21,22} and for whom they are important cultural and spiritual places.^{23,24} These people make decisions about the future land uses and activities based on their knowledge and values for forests in response to drivers of change – they make planning decisions about the forest landscape. Their ability to make and implement these decisions is informed by their knowledge, their capacity and their land rights, all of which are affected by their engagement with governments, industry and NGOs. Providing these communities and other stakeholders with effective planning and management tools can help improve forest management.

THE THREE PILLARS FRAMEWORK FOR EVALUATING INTEGRATED LANDSCAPE APPROACHES

Integrated landscape approaches take a more holistic view of the multiple ecosystems, land uses and stakeholders across the landscape level, in response to the limits of sector-specific conventional forest and land management focusing on industrial productivity or conservation.^{25–27} However, there is limited evidence of the success of integrated landscape approaches.^{25,27}

Demonstrating the success of these approaches rests on good evaluation, which is also essential for integrated landscape approaches. However, evaluation is challenging. Firstly, there is little

BOX

1.

Primary Forests and Ecosystem Services

Primary forests are forests not subject to management for commodity production and other industrial scale commercial uses and whose structure and function are dominated by natural processes. They make up at least 1.11 billion ha of the estimated 4.06 billion hectares of forest globally.

Forests provide multiple 'ecosystem service' benefits to people at multiple scales, including acting as a major carbon stock for climate regulation and irreplaceable value for terrestrial biodiversity. The quality and quantity of forest ecosystem services are related to the ecosystem integrity of a forest. Primary forests provide the highest quantity and quality of ecosystem service benefits, compared to secondary forests, forest managed for commodity production and degraded forests.

A landscape perspective is important to allow primary forests to be distinguished from planted forests, forests damaged by logging, second-growth forests, and regrowing forest patches within agricultural landscapes.

agreement on what integrated landscape approaches require. There are multiple concepts and terms, as well as different sets of principles, all adding to the confusion and limiting guidance for, and assessment of, landscape-level efforts.²⁵⁻²⁷ Secondly, forest landscapes are highly diverse, and so creating consistent and comparable evaluations is challenging. Finally, in many forest landscapes, especially tropical primary forest landscapes, there is limited resources and capacity, which can limit monitoring and evaluation.

The Three Pillars Framework^{6,7} (Figure 1) synthesises three existing sets of principles^{26,28,29} for landscape action into a simple but flexible framework. It recognises that landscape management is about the health of ecosystems and the multiple benefits they provide (ecosystem integrity), as well as people and their decision-making (governance), with choices over future land uses and activities (planning) providing the link between the two. These three pillars are essential components to ensure both healthy forest ecosystems and sustainable, just and legitimate management of the landscape. Evaluation of these three pillars together provides the basis for a holistic evaluation of integrated landscape approaches to forest management. Importantly, the framework is designed to be straightforward enough to be allow for evaluation in contexts with limited resources and capacity, such as tropical forest communities in developing countries, but also flexible enough to allow for the development of more rigorous and complex evaluations where resources allow.

BOX 2. Effective Planning

Land use planning is conventionally associated with urban areas and formal government-led processes, although more strategic and regional planning encompasses rural areas and forests.

Landscape planning in the Three Pillars framework combines the social learning aspects of land use planning, the integrated focus of strategic planning and the focus on justice and empowerment of more informal 'radical' planning approaches.

Note that this planning doesn't have to be formal and government-led, but can be any process where people come together to make decisions about future land uses and activities. Development and conservation activities common in forest landscapes, such as participatory rural appraisal and Theories of Change, are nascent planning processes, as are many existing community activities.



Figure 1. The Three Pillars Framework for Integrity-based Forest Landscape Management

EFFECTIVE PLANNING FOR INTEGRATED LANDSCAPE APPROACHES

Effective planning is a future focused practice of public action to bring together knowledge with ethical values to choose land uses and activities across a landscape.^{30,31} Landscape planning brings stakeholders together to choose land uses, activities and policies with the aim of creating sustainability, just benefit sharing and improved wellbeing.

The definition of planning used here includes any practices that brings people together to help them make choices about their future land use and landscape activities.^{32,33} In many forest contexts, planning is unlikely to be formalised planning with strategic planning documents, led by governments. This is increasingly true, even in industrialised countries, as forest management shifts to more community-based forest management. Planning is often associated with governments, but developing local planning can be an effective way to empower communities to take control of and protect their natural resources and landscapes.

EVALUATING PLANNING

The Three Pillars Framework demonstrated that effective planning requires participatory processes to create *shared learning, holistic integration and situated justice*. These three principles are based on the planning literature and provide the basis for a 'Principles, Criteria and Indicators' (Box 4)^{34,35} evaluation framework for planning processes. This parallels and complements an existing governance evaluation framework.³⁶

The planning evaluation operates alongside evaluations of governance and ecosystem integrity. Strong governance is a key element of good planning. In fact, planning evaluation often focuses on governance; but governance is not the only element of good planning. The principles, criteria and indicators identified here are for elements of planning that are not directly related to governance, but are equally important.

SHARED LEARNING

Planning is commonly described as a practice to turn 'knowledge into action'^{30,37}. However, given the limits of technocratic and/or scientific approaches to planning,^{38,39} planning must be informed by local contexts and local knowledge. Shared learning brings scientific, local and Indigenous knowledges together in search of a shared understanding of the issues and potential solutions.⁴⁰ These shared learning processes help address uncertainty and complexity, while also supporting greater legitimacy.⁴¹⁻⁴³ Further, this understanding empowers people to choose actions in the landscape that are both in line with their values and grounded in a scientific understanding of threats, risk, opportunities, options and requirements.

BOX 3.

Principle, Criteria and Indicators for Evaluation

Principle, criteria and indicator frameworks are common evaluation and assessment tools. They often serve as a basis for standards, which provide reference for monitoring, reporting and evaluation, including in timber certification schemes and sustainable forest management guidelines. Principles are typically normative statements that reflect desires and values within a given system; they are ideals and non-measurable. Criteria function at the level below principles, as parameters that demonstrate compliance to specific aspects of the system's states. They are designed to facilitate assessment of principles and are categories of conditions or processes that contribute to the principle, and, if they are consistently met, reliably suggest the principle is being achieved or upheld. Criteria are not usually directly measurable but are formulated to make it possible to determine the degree of compliance. Indicators are parameters that can be measured qualitatively or quantitatively, and describe the condition of the system and/or degree of compliance with the related criteria.

HOLISTIC INTEGRATION

The holistic and integrated nature of landscape approaches means that multiple land uses, activities, sectors and stakeholders need to be included within planning. Landscape planning combines strategic planning^{44,45} with a more conventional land use focus to create a more holistic and integrated view of planning, inclusive of ecological, cultural, other social and economic concerns.³¹ Holistic integration is an ideal: the planning process has to contend with the reality that communities and other stakeholders in forest landscapes face specific, immediate challenges and barriers such as encroachment of illegal land use activities⁴⁶ or addressing immediate food security needs.⁴⁷ Planning will necessarily focus on these priorities, but integration is about keeping an open mind, and ensuring that issues which are or may become relevant are not missed. While absolute integration is unachievable, co-ordination and collaboration are key elements to help ensure that the choice and implementation of activities on the ground harness the expertise of the stakeholders while recognising the multiple uses, the requirements of ecosystem integrity and promotes fair benefit sharing.

SITUATED JUSTICE

Justice is a key issue for forest landscapes. Locals can be forced or manipulated to sell or lease land by external actors exploiting their need for an income or lack of knowledge of the terms or implications.⁴⁸ The importance of territorial rights and integrity in forest protection is widely recognised,^{48,49} and there is increasing evidence of reduced forest loss and degradation where local and Indigenous land rights are recognised and enforced, especially in the Tropics.^{46,49} To have social licence, processes and mechanisms must result in just outcomes that equitably improve the wellbeing and capabilities of those dependent on the landscape, especially Indigenous and other local communities.^{50,51}

Planning can be a means to empower communities to take action themselves and to address injustice.^{50,52,53} However, if planning is not aware of or fails to address power imbalances among competing interests and stakeholders it can end up protecting existing power structures and inequality.⁵²⁻⁵⁴ A 'capabilities' view of justice^{55,56} provides a useful way to understand how planning can support justice.^{50,57}

Effective planning can support the equitable distribution of benefits, land and resources, as well as the fair sharing of risks and responsibilities if it is mindful that with power comes increased responsibility to promote the common good. However, there are limits – planning is about identifying choices, but it does not make ultimate decisions.⁵⁸ Hence, evaluation should focus on a principle of

BOX

4.

Using the Framework to Improve Planning

The framework guides key questions for planners to ask, as outlined in the **supplementary material accompanying the paper**. The framework helps identify weaknesses in current planning or key issues that future planning must address, and guide the choice of planning tools.

For example, if collaboration is weak because not all the stakeholders are on board, then a stakeholder analysis might be needed. Weaknesses in issue identification might be remedied by problem-tree workshops. A lack of shared objectives might be addressed by a visioning or backcasting process. More sophisticated and complete planning processes, such as scenario planning, might help address multiple integration and shared learning criteria. Weaknesses in situated justice indicators might suggest a more activist and political approach is needed, if this is something the stakeholders, including the planners, are comfortable with.

Note that the ideal is for stakeholders to provide the assessment, but wary of stakeholder fatigue, especially in contexts where capacities and resources are limited, use of existing data and processes can be used, at least initially. Given the lack of planning evaluation tools for nascent and emerging planning, the framework provides a theoretically grounded and consistent basis to help assess and improve planning.

justice that is appropriate and relevant for the particular geographic and cultural context of a particular forest landscape: *situated justice*. Situated justice supports and promotes ethical and responsive deliberation and discussion about choices of actions within the context of that place.^{59,60}

USING THE EVALUATION FRAMEWORK

This planning evaluation framework provides the basis for assessing planning in a way that can be applied consistently across multiple forest contexts. It can help identify the relative strengths and weaknesses in decision-making processes to provide guidance as to where resources and efforts can be focused or redistributed.

Bearing in mind the nascent and emerging nature of planning in many primary and other natural forest landscape contexts, the assessment framework also provides the basis for participatory planning going forward. The framework offers some key questions for planners to ask when extending support to those already engaged in informal planning processes. Further, the framework can be used to canvass stakeholder views, via surveys and interviews, of the key indicators of planning success. The results of these questions can be analysed and fed back to the stakeholders through workshops or informal group discussions.

By actively seeking assessment from stakeholders, the framework helps identify areas missing in current planning or key issues that future planning must address. The framework also guides further planning actions: having identified the weaknesses in current informal or formal planning, planners can choose from the plethora of planning tools to address the gap or weakness (Box 4). In fact, the assessment provides the basis of the first step of planning. Just as a governance evaluation can be used as the basis for a developing a governance standard,⁶¹ a 'planning standard' developed from this planning evaluation could act as an initial 'plan' for the stakeholders, built in a participatory manner from the bottom-up.

Note that this planning evaluation framework complements and is designed to be operationalised alongside governance evaluation as part of a three pillar approach to integrated forest landscape management. Strong governance focuses on 'how' decisions are made, but does not guarantee the right issues are addressed to maintain ecosystem integrity and address stakeholder concerns and issues. Effective planning helps stakeholders define the 'what' – the coordinated goals

and aims of actions and activities, taking into account ecosystem integrity and the values and needs of stakeholders. The planning evaluation framework proposed here provides a way to help stakeholders, including planners, reflect on and assess how well the 'what' is being addressed.

The evaluation outlined here is not a substitute for rigorous environmental and socio-economic monitoring that feed back into an ongoing planning process. However, identifying and implementing monitoring is context-specific, long term, resource intensive, and may not be accessible to those engaged in informal landscape planning processes. Given the timescale of landscape planning, there is great benefit in ongoing stakeholder assessment and structured reflection as proposed here.

FUTURE WORK

Further work will test the framework in a variety of forest landscapes. Operationalising the framework in different contexts will help refine the framework, including clarifying and refining the assessment questions needed and identifying existing tools and planning activities that might provide suitable assessments of indicators.

SOURCE REFERENCE

Morgan, E. A., Osborne, N., & Mackey, B. (2022). Evaluating planning without plans: Principles, criteria and indicators for effective forest landscape approaches. *Land Use Policy*, 115, 106031. <https://doi.org/10.1016/j.landusepol.2022.106031>

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REFERENCES

1. Turubanova, S., Potapov, P. V., Tyukavina, A., & Hansen, M. C. (2018). Ongoing primary forest loss in Brazil, Democratic Republic of the Congo, and Indonesia. *Environmental Research Letters*, 13(7), 074028. <https://doi.org/10.1088/1748-9326/aacd1c>
2. Achard, F., Beuchle, R., Mayaux, P., Stibig, H.-J., Bodart, C., Brink, A., Carboni, S., Desclée, B., Donnay, F., Eva, H. D., Lupi, A., Raši, R., Seliger, R., & Simonetti, D. (2014). Determination of tropical deforestation rates and related carbon losses from 1990 to 2010. *Global Change Biology*, 20(8), 2540–2554. <https://doi.org/10.1111/gcb.12605>
3. 3. FAO & UNEP. (2020). The State of the World's Forests 2020. Forests, biodiversity and people. FAO and UNEP. <https://doi.org/10.4060/ca8642en>
4. Mackey, B., DellaSala, D. A., Kormos, C., Lindenmayer, D., Kumpel, N., Zimmerman, B., Hugh, S., Young, V., Foley, S., Arsenis, K., & Watson, J. E. M. (2015). Policy Options for the World's Primary Forests in Multilateral Environmental Agreements. *Conservation Letters*, 8(2), 139–147. <https://doi.org/10.1111/conl.12120>
5. Taye, F. A., Folkersen, M. V., Fleming, C. M., Buckwell, A., Mackey, B., Diwakar, K. C., Le, D., Hasan, S., & Ange, C. S. (2021). The economic values of global forest ecosystem services: A meta-analysis. *Ecological Economics*, 189, 107145. <https://doi.org/10.1016/j.ecolecon.2021.107145>
6. Morgan, E. A., Cadman, T., & Mackey, B. (2020). Integrating forest management across the landscape: A three pillar framework. *Journal of Environmental Planning and Management*, 64(10), 1735–1769. <https://doi.org/10.1080/09640568.2020.1837747>
7. Morgan, E. A., Cadman, T., & Mackey, B. (2021). The Three Pillars Of Integrity-Based Forest Management: Ecosystem Integrity, Strong Governance And Effective Planning (Policy Brief No. 2/21; Science Informing Policy Briefing Note) [PDF]. Griffith University. <https://doi.org/10.25904/1912/4509>
8. Morgan, E. A., Osborne, N., & Mackey, B. (2022). Evaluating planning without plans: Principles, criteria and indicators for effective forest landscape approaches. *Land Use Policy*, 115, 106031. <https://doi.org/10.1016/j.landusepol.2022.106031>
9. Perera, A. H., Peterson, U., Pastur, G. M., & Iverson, L. R. (2018). Ecosystem Services from Forest Landscapes: Broadscale Considerations. Springer.
10. Mackey, B., Kormos, C. F., Keith, H., Moomaw, W. R., Houghton, R. A., Mittermeier, R. A., Hole, D., & Hugh, S. (2020). Understanding the importance of primary tropical forest protection as a mitigation strategy. *Mitigation and Adaptation Strategies for Global Change*, 25, 763–787. <https://doi.org/10.1007/s11027-019-09891-4>
11. Dellasala, D. A., Kormos, C. F., Keith, H., Mackey, B., Young, V., Rogers, B., & Mittermeier, R. A. (2020). Primary Forests Are Undervalued in the Climate Emergency. *BioScience*, 70(6), 445–445. <https://doi.org/10.1093/biosci/biaa030>
12. Barlow, J., Gardner, T. A., Araujo, I. S., Ávila-Pires, T. C., Bonaldo, A. B., Costa, J. E., Esposito, M. C., Ferreira, L. V., Hawes, J., Hernandez, M. I. M., Hoogmoed, M. S., Leite, R. N., Lo-Man-Hung, N. F., Malcolm, J. R., Martins, M. B., Mestre, L. a. M., Miranda-Santos, R., Nunes-Gutjahr, A. L., Overal, W. L., ... Peres, C. A. (2007). Quantifying the biodiversity value of tropical primary, secondary, and plantation forests. *Proceedings of the National Academy of Sciences*, 104(47), 18555–18560. <https://doi.org/10.1073/pnas.0703333104>
13. Dirzo, R., & Raven, P. H. (2003). Global State of Biodiversity and Loss. *Annual Review of Environment and Resources*, 28(1), 137–167. <https://doi.org/10.1146/annurev.energy.28.050302.105532>
14. Spracklen, D. V., Arnold, S. R., & Taylor, C. M. (2012). Observations of increased tropical rainfall preceded by air passage over forests. *Nature*, 489(7415), 282–285. <https://doi.org/10.1038/nature11390>
15. Millennium Ecosystem Assessment Board. (2005). *Ecosystems and Human Wellbeing*. Island Press. <http://www.millenniumassessment.org>
16. Tollefson, J. (2020). Why deforestation and extinctions make pandemics more likely. *Nature*, 584(7820), 175–176. <https://doi.org/10.1038/d41586-020-02341-1>
17. Kim, D.-H., Sexton, J. O., & Townshend, J. R. (2015). Accelerated deforestation in the humid tropics from the 1990s to the 2000s. *Geophysical Research Letters*, 42(9), 3495–3501. <https://doi.org/10.1002/2014GL062777>
18. Leblois, A., Damette, O., & Wolfersberger, J. (2017). What has Driven Deforestation in Developing Countries Since the 2000s? Evidence from New Remote-Sensing Data. *World Development*, 92, 82–102. <https://doi.org/10.1016/j.worlddev.2016.11.012>

19. Bebbington, A. J., Bebbington, D. H., Sauls, L. A., Rogan, J., Agrawal, S., Gamboa, C., Imhof, A., Johnson, K., Rosa, H., Royo, A., Toumbourou, T., & Verdum, R. (2018). Resource extraction and infrastructure threaten forest cover and community rights. *Proceedings of the National Academy of Sciences*, 115(52), 13164–13173. <https://doi.org/10.1073/pnas.1812505115>
20. Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018). Classifying drivers of global forest loss. *Science*, 361(6407), 1108–1111. <https://doi.org/10.1126/science.aau3445>
21. Mackey, B., Nalau, J., Sahin, O., Fleming, C., Smart, J. C. R., Connolly, R., Hallgren, W., & Buckwell, A. J. (2017). Vanuatu Ecosystem and Socio-economic Resilience Analysis and Mapping (ESRAM). Secretariat for the Pacific Regional Environment Program (SPREP). <https://pacificdata.org/data/dataset/ecosystem-and-socio-economic-resilience-analysis-and-mapping-vanuatu132ddf1c-21a5-4412-8a60-6dd>
22. Zimmerman, B., Schwartzman, S., Jerozolimski, A., Eslei, J., Santini, E., & Hugh, S. (2020). Large Scale Forest Conservation With an Indigenous People in the Highly Threatened Southeastern Amazon of Brazil: The Kayapo. In Reference Module in Earth Systems and Environmental Sciences (p. B9780124095489118000). Elsevier. <https://doi.org/10.1016/B978-0-12-409548-9.11918-9>
23. Buckwell, A., Fleming, C., Muurmans, M., Smart, J. C. R., Ware, D., & Mackey, B. (2020). Revealing the dominant discourses of stakeholders towards natural resource management in Port Resolution, Vanuatu, using Q-method. *Ecological Economics*, 177, 106781. <https://doi.org/10.1016/j.ecolecon.2020.106781>
24. Kenter, J. O., Hyde, T., Christie, M., & Fazey, I. (2011). The importance of deliberation in valuing ecosystem services in developing countries—Evidence from the Solomon Islands. *Global Environmental Change*, 21(2), 505–521. <https://doi.org/10.1016/j.gloenvcha.2011.01.001>
25. Reed, J., Van Vianen, J., Deakin, E. L., Barlow, J., & Sunderland, T. (2016). Integrated landscape approaches to managing social and environmental issues in the tropics: Learning from the past to guide the future. *Global Change Biology*, 22(7), 2540–2554. <https://doi.org/10.1111/gcb.13284>
26. Sayer, J. A., Sunderland, T., Ghazoul, J., Pfund, J.-L., Sheil, D., Meijaard, E., Venter, M., Boedhihartono, A. K., Day, M., Garcia, C., Oosten, C. van, & Buck, L. E. (2013). Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences*, 110(21), 8349–8356. <https://doi.org/10.1073/pnas.1210595110>
27. Arts, B., Buizer, M., Horlings, L., Ingram, V., van Oosten, C., & Opdam, P. (2017). *Landscape Approaches: A State-of-the-Art Review*. Annual Review of Environment and Resources, 42(1), 439–463. <https://doi.org/10.1146/annurev-environ-102016-060932>
28. Convention on Biological Diversity. (2007, February 7). *Ecosystem Approach—Principles*. <https://www.cbd.int/ecosystem/principles.shtml>
29. Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. <https://doi.org/10.1017/CB09780511807763>
30. Friedmann, J. (1987). *Planning in the Public Domain: From Knowledge to Action*. Princeton University Press.
31. Selman, P. (2005). *Planning and the Landscape Scale*. Taylor and Francis.
32. Thorpe, A. (2017). Rethinking Participation, Rethinking Planning. *Planning Theory & Practice*, 18(4), 566–582. <https://doi.org/10.1080/14649357.2017.1371788>
33. Healey, P. (2012). The universal and the contingent: Some reflections on the transnational flow of planning ideas and practices. *Planning Theory*, 11(2), 188–207. <https://doi.org/10.1177/1473095211419333>
34. Lammerts van Bueren, E. M., & Blom, E. M. (1997). Hierarchical framework for the formulation of sustainable forest management standards. The Tropenbos Foundation. <https://www.tropenbos.org/resources/publications/>
35. FAO. (2015, June 3). *Criteria and Indicators—For sustainable forest management*. Food and Agriculture Organization of the United Nations. <http://www.fao.org/forestry/ci/en/>
36. Cadman, T. (2012). Evaluating the Quality and Legitimacy of Global Governance: A Theoretical and Analytical Approach. 2(1), 21.
37. Campbell, H. (2012). Planning to Change the World: Between Knowledge and Action Lies Synthesis. *Journal of Planning Education and Research*, 32(2), 135–146. <https://doi.org/10.1177/0739456X11436347>
38. Friedmann, J. (2011). *Insurgencies: Essays in planning theory*. Routledge.
39. MacCallum, D. (2008). Participatory Planning and Means-Ends Rationality: A Translation Problem. *Planning Theory & Practice*, 9(3), 325–343. <https://doi.org/10.1080/14649350802277852>

40. Albert, C., Zimmermann, T., Knieling, J., & von Haaren, C. (2012). Social learning can benefit decision-making in landscape planning: Gartow case study on climate change adaptation, Elbe valley biosphere reserve. *Landscape and Urban Planning*, 105(4), 347–360. <https://doi.org/10.1016/j.landurbplan.2011.12.024>
41. Tippett, J., & How, F. (2020). Where to lean the ladder of participation: A normative heuristic for effective coproduction processes. *Town Planning Review*, 91(2), 109–132. <https://doi.org/10.3828/tpr.2020.7>
42. Watson, V. (2014). Co-production and collaboration in planning – The difference. *Planning Theory & Practice*, 15(1), 62–76. <https://doi.org/10.1080/14649357.2013.866266>
43. Morgan, E. A., & Grant-Smith, D. C. C. (2015). Tales of science and defiance: The case for co-learning and collaboration in bridging the science/emotion divide in water recycling debates. *Journal of Environmental Planning and Management*, 58(10), 1770–1788. <https://doi.org/10.1080/09640568.2014.954691>
44. Albrechts, L., & Balducci, A. (2013). Practicing Strategic Planning: In Search of Critical Features to Explain the Strategic Character of Plans. *DisP - The Planning Review*, 49(3), 16–27. <https://doi.org/10.1080/02513625.2013.859001>
45. Healey, P. (2009). In Search of the “Strategic” in Spatial Strategy Making. *Planning Theory & Practice*, 10(4), 439–457. <https://doi.org/10.1080/14649350903417191>
46. Garcia, B., Rimmer, L., Vieira, L. C., & Mackey, B. (2021). REDD+ and forest protection on indigenous lands in the Amazon. *RECIEL: Review of European, Comparative and International Environmental Law*, 1–13. <https://doi.org/10.1111/reel.12389>
47. Samndong, R. A., Bush, G. K., Vatn, A., & Chapman, M. (2018). Institutional analysis of causes of deforestation in REDD+ pilot sites in the Equateur province: Implication for REDD+ in the Democratic Republic of Congo. *Land Use Policy*, 76, 664–674. <https://doi.org/10.1016/j.landusepol.2018.02.048>
48. Notess, L., Veit, P., Monterroso, I., Andiko, Sulle, E., Larson, A. M., Gindroz, A.-S., Quaedvlieg, J., & Williams, A. (2018). The Scramble for Land Rights. World Resources Institute. <https://www.wri.org/publication/scramble-for-land-rights>
49. Lawler, J. H., & Bullock, R. C. L. (2017). A Case for Indigenous Community Forestry. *Journal of Forestry*, 115(2), 117–125. <https://doi.org/10.5849/jof.16-038>
50. Basta, C. (2015). From justice in planning toward planning for justice: A capability approach. *Planning Theory*. <https://doi.org/10.1177/1473095215571399>
51. Lane, M. B. (2006). The role of planning in achieving indigenous land justice and community goals. *Land Use Policy*, 23(4), 385–394. <https://doi.org/10.1016/j.landusepol.2005.05.001>
52. Osborne, N. (2015). Intersectionality and kyriarchy: A framework for approaching power and social justice in planning and climate change adaptation. *Planning Theory*, 14(2), 130–151. <https://doi.org/10.1177/1473095213516443>
53. Miraftab, F. (2009). Insurgent Planning: Situating Radical Planning in the Global South. *Planning Theory*, 8(1), 32–50. <https://doi.org/10.1177/1473095208099297>
54. Cameron, J., & Grant-Smith, D. (2014). Putting people in planning: Participatory planning, inclusion and power. In J. Byrne, J. Dodson, & N. Sipe (Eds.), *Australian Environmental Planning: Challenges and Future Prospects* (pp. 197–205). Routledge.
55. Nussbaum, M. (2003). Capabilities as Fundamental Entitlements: Sen and Social Justice. *Feminist Economics*, 9(2–3), 33–59. <https://doi.org/10.1080/1354570022000077926>
56. Sen, A. K. (2009). *Idea of Justice*. Harvard University Press. <http://ebookcentral.proquest.com/lib/griffith/detail.action?docID=3300817>
57. Lake, R. W. (2016). Justice As Subject and Object of Planning. *International Journal of Urban and Regional Research*, 40(6), 1205–1220. <https://doi.org/10.1111/1468-2427.12442>
58. Albrechts, L. (2015). Ingredients for a More Radical Strategic Spatial Planning. *Environment and Planning B: Planning and Design*, 42(3), 510–525. <https://doi.org/10.1068/b130104p>
59. Campbell, H. (2006). Just Planning: The Art of Situated Ethical Judgment. *Journal of Planning Education and Research*, 26(1), 92–106. <https://doi.org/10.1177/0739456X06288090>
60. Hillman, M. (2006). Situated justice in environmental decision-making: Lessons from river management in Southeastern Australia. *Geoforum*, 37(5), 695–707. <https://doi.org/10.1016/j.geoforum.2005.11.009>
61. Lopez-Casero, F., Cadman, T., & Maraseni, T. (2016). Quality-of-governance standards for forest management and emissions reduction. Developing community forestry and REDD+ governance through a multi-stage, multi-level and multi-stakeholder approach. 2016 Update (No. DP1504). Institute for Global Environmental Strategies (IGES). https://pub.iges.or.jp/system/files/publication_documents/pub/discussionpaper/5257/Discussion_paper_Governance_Standard_20160331_FLC_final_A4.pdf