Psychological Outcomes of REDD+ Projects: Evidence from Country Case Studies

Jack Baynes[1,2], Geoff P Lovell[2,3] and John Herbohn[2]

[1]Corresponding author. Email: jbaynes@usc.edu.au
https://orcid.org/0000-0002-2701-2031
[2]Tropical Forests and People Research Centre, Forest Research Institute, University of the Sunshine Coast, Sippy Downs, Qld, Australia 4556
[3] Department of Sport, Hartpury University, UK.

Abstract

We apply self-determination theory (SDT) to explain how psychological outcomes on participants in 'Reducing Emissions from Deforestation and Forest Degradation' (REDD+) projects, can provide lessons for other forest landscape management programs. Evidence from REDD+ case studies suggests that negative outcomes may result from three design factors. Payment for environmental services (PES) may reduce participants' motivation and competence in livelihood activities. A large-scale landscape approach to REDD+ increases stakeholder heterogeneity which may reduce participants' ability to liaise and cooperate. Trade-offs between traditional forest uses and conservation goals may reduce participants' autonomy to develop their livelihoods. By inference, replicating these design factors in comparable forest landscape management programs or projects may also result in similar negative outcomes. Replacing PES with additional – not substitute – livelihood-based capacity building and reducing the physical landscape to the social landscape which encompasses stakeholders' capacity to work together may mitigate these outcomes.

29 Keywords: Self-determination theory; reducing emissions from deforestation and forest
30 degradation; psychosocial autonomy; locus of causality; payments for environmental services
31

1. Introduction

Psychosocial perspectives in forest conservation and restoration have recently been presented in studies of disjuncts between traditional and modern institutions (Poudel 2017), symbolic violence (Ojha 2009; Baynes et al. 2016) or actual violence (Howson 2018). These studies reflect increasing interest in the social factors which affect biophysical outcomes. As a quasi-social science experiment in which the livelihoods of participants were treated as variables during project design (Korhonen-Kurki et al. 2016), REDD+ projects have recently begun to provide valuable psychosocial case study evidence. Positive outcomes have been matched with negatives such as forced family relocations (c.f. Vatn et al. 2017). REDD+ has even been labelled as 'ecological ransom' (Howson 2018) or a tool for State 'territorialisation', i.e. restricting traditional land rights (Ramcilovic-Suominen 2019). Hence, we suggest that there has not been a sufficiently robust psychosocial theoretical framework to guide the design and evaluation of programs and individual projects. To approach this deficit, in this paper we propose self-determination theory (SDT), (Deci & Ryan 1985; 2002; Ryan and Deci 2000) as a 'lens' to explain how some participants have been negatively affected by REDD+.

SDT and its sub-theory Basic Needs Theory (Deci and Ryan 2002), occupy a prominent place in psychology texts which deal with goal-directed behaviour, motivation and well-being (c.f. Deci & Ryan 1985, 2000; Gollwitzer 2012). SDT asserts that people function and develop effectively as a product of their social environment and its potential to satisfy basic psychological needs. Satisfaction of these needs is assumed to directly enhance motivation as well as psychological and physical well-being (Deci & Ryan 2000; Moller et al. 2006). Empirical evidence across cultures and a wide range of contexts supports the SDT principle that experiences which increase people's autonomy in choosing courses of action, also

reinforce their success in later activities, and the effects can be persistent (Ryan and Deci 2000; Gagné et al 2015). In contrast, experiences which involve coercion or reluctant compliance (i.e. a lack of choice) can subsequently reduce success in other activities (Vallerand 2000; Deci et al. 2001; Moller et al. 2006; Blanchard et al. 2009). Hence, SDT is a suitable heuristic to interpret the large amount of REDD+ data which has recently been published in the form of case studies. By inference, the results of REDD+ may then be applied to other similar programs or projects.

REDD+ is a climate change mitigation solution which has been developed by parties to the United Nations Framework Convention on Climate Change (UNFCCC) (UN-REDD 2020a). Incorporating deforestation into global climate negotiations began at the eleventh UN Conference of the Parties (COP) in 2005 in Montreal. At the COP 13 in Bali in 2007, the key mechanism to reduce deforestation and increase carbon capture was accepted (in principle) as direct economic and financial incentives through payments to developing countries and through them, to local stakeholders (Angelsen et al. 2018). For these stakeholders, safeguards such as protection against human rights violations, were included at the COP 16 in Cancun in December 2010. These safeguards became known as the 'Cancun Agreements' (UN-REDD 2018a; UN-REDD 2020b).

At its core, REDD+ is a financial incentives-based strategy (through performance-based payments) to compensate stakeholders in return for demonstrable reductions in carbon emissions from deforestation and forest degradation (Agrawal et al. 2011; Gurung and Setowati 2012). At REDD+ sites, interventions may include enabling policies, such as reforming land tenure to assist governance and law enforcement. Incentive-based policies, such as payment for environmental services (PES) may enhance local livelihoods or compensate forest users for

a loss of usufruct rights. Disincentives may include land-use restrictions (Duchelle et al. 2018; Börner and West 2018), in which case, local people are those most likely to incur the livelihood opportunity costs (Rakatama et al. 2017). Hence, even at the early stages of REDD+ project planning and implementation, it was recognised that addressing the interests of local actors was critical to success (Thompson et al. 2010). To avoid governance problems between national and local actors in developing countries, Pedroni et al. (2009), suggested a nested approach in which REDD+ projects could be established at a local level and then be subsumed into a wider national REDD+ framework. However, this creates a potential paradox in which revenues from REDD+ could increase the value of standing forest, thereby incentivising central government bureaucracies to re-centralise control over the forest to retain the revenue. Disenfranchised local stakeholders then would have little incentive to sustainably manage the forest (Sandbrook et al. 2010).

By 2018, more than 350 REDD+ projects had been implemented across the tropics (Duchelle et al. 2018). Early reporting of these projects (mostly from the grey literature) indicates that many nations were unprepared to manage the social issues of project implementation. For example, in East Africa, corruption could complicate implementation (Mwayafu and Kisekka (2012), meaningful participation with local communities would be necessary in Asia (Yasmi et al. 2012; Lestrelin et al. 2013), customary land rights would require protection in many countries (Janki 2009; Sunderlin et al. 2013) and gender-issues had not yet been incorporated into project objectives in Vietnam (Gurung and Setowati 2012). It became evident that REDD + interventions needed to secure commitments from local actors expected to forgo their current uses of forest resources (West 2015). Difficulties in the monitoring reporting and verification (MRV) of carbon stocks have emerged. For example, on REDD+ project sites in the Brazilian Amazon, the difficulty in reconciling ex-ante estimates of deforestation with ex-post reductions

in deforestation, has cast doubt on the methods used there to calculate carbon capture (West et al. 2020). Unfortunately, of the 26 national programmes undertaken between UN-REDD and partner countries, 16 had closed by 2018 (UN-REDD 2018b).

Early concerns appear to have been borne out in later case studies of REDD+ projects which focused on the social impacts. These studies are the data source for this paper. Hence, the purpose of this paper is to focus on the social factors which may cause REDD+ projects to succeed or fail, and to provide guidelines for improved project implementation, in this case through the lens of SDT. In this paper, we use a thematic analysis of positive and negative outcomes in REDD+ pilot-project case studies to discover common themes – across cases and across countries – which have been shown to be important to the design and delivery of REDD+ projects. We discuss our findings in terms of their potential psychological effects on project participants. Finally, we present the implications of our findings for similar forest landscape management projects.

2. SDT as a theoretical psychosocial framework to consider REDD+ outcomes

In SDT, people have three fundamental psychological needs: competence, relatedness and autonomy (Ryan & Deci 2000; Deci & Ryan 2001). Competence concerns an individual's need for a sense of mastery, in this case of their livelihoods. Relatedness corresponds to feeling connected to other people, both those to whom one is close and broader society (Blanchard et al. 2009; Emery et al. 2016). The inherent need for autonomy or control is fulfilled when people perceive that they are the origin of their choices and decisions and actions. This does not imply a need to act independently of others, but with a sense of volition, even if it is a negotiated process (Van den Broek et al. 2016; Trougakos et al. 2014). Combined, these three needs are

similar to notions of personal *social capital*, *self-efficacy* or *agency*, which serve as useful heuristics to link social theory with empirical observations of human behaviour (c.f. Hitlin 2007). The three needs also provide a complementary and more personally oriented approach to the principles of participatory stakeholder engagement, empowerment and equity promoted in REDD+ and FLR.

The usefulness of SDT as a theoretical lens through which to interpret REDD+ psychological impacts comes from its ability to explain human motivation. Satisfaction of people's needs for competence, relatedness and autonomy yields positive outcomes in terms of motivation, i.e. the mental energy, drive and persistence that determine the direction, intensity, and sustainability of their behaviour (Ryan and Deci 2000). In SDT, motivation is considered as a continuum of varying degrees of individual autonomy. At one extreme of the continuum, intrinsic motivation is associated with high levels of self-determination or a perceived ability to achieve personal goals. Further down the scale is extrinsic motivation, and then ultimately amotivation, which is characterised by passivity and a lack of any impetus for personal autonomy.

In contrast to intrinsic motivation, extrinsic motivation is characterised by compliance either to promised rewards or punishment, both of which reduce the enthusiasm, time and energy people devote to required behaviours. Empirical studies, for example Deci et al. (2001), have shown the detrimental long-term effects of extrinsic motivation which condition people to a perception of an external *locus of causality*. People with an external locus of causality view themselves as 'pawns' to external forces (such as luck), compared with people with an internal locus of causality in which they see themselves as the origin of their behaviour, possibly through ability or effort (Ryan and Connell 1989; Moller et al. 2006). In recent years, SDT has

been widely used in studies of workplace productivity (Howard et al. 2016), leadership style (Rezvani et al. 2017) and adolescent development (Russo and Stattin, 2017). In a manner analogous to the way success in REDD+ or FLR projects is predicated on community cohesion and democratic governance, Blanchard et al. (2009) used SDT as the theoretical basis of research into the effect of coaching style and management on team cohesion and individual motivation in sport.

SDT can provide important insights into the design and implementation of forest conservation and restoration programs. For example, if a project or program is designed or implemented so that participants have little or no input to the purpose, design, goals and social groupings, their motivation is likely to eroded. Furthermore, if support is seen merely as a payment or a reward for taking part, and if this reward is not contingent on performance towards defined performance indicators − which are accepted as being important and meaningful by the participants − the support is likely to reduce participants' perceptions of control. The rewards will not be seen as a reflection of competence and participants' intrinsic motivation will consequently be reduced (Lepper et al. 1973; Deci and Ryan 1985).

3. Methods: Assembling evidence from the literature and conducting a thematic analysis

Most REDD+ planning, and implementation has occurred as REDD+ Readiness activities and pilot projects. Hence, our methods were predicated on case studies of these projects. We used the Scopus and Science Direct databases to conduct searches using the terms 'REDD+', 'carbon forestry' and 'reducing emissions from deforestation and forest degradation in developing countries'. Much of the REDD+ literature is focused on financing, the difficulty of the MRV of carbon stocks and the complexities of inter- and intranational cooperation required

to make REDD+ succeed as a global mechanism. In this case, we wished to examine the direct effect of projects on participants livelihoods. Hence, our approach was purposive in selecting case studies in which the authors directly addressed local participants' acceptance or rejection of REDD+, often expressed as direct quotes from interviews. We found 46 REDD+ empirical case studies from 18 countries which reported the success and failure of projects in these terms. The studies were published between 2011-2019, with 78 percent of them being published between 2017-2019. Because we wished to examine the relevance of data related to the three SDT needs of competence, relatedness and autonomy, using procedures described by Braun and Clarke (2006) and Maguire and Delahunt (2017), we undertook a thematic analysis of the cases, using the three SDT needs as potential themes. The purpose of a thematic analysis is to identify or validate themes or patterns within, for example, interview transcripts or the cases of a case study. The output is typically expressed as a thematic map which depicts the relationships between the themes. In our case, the purpose of the analysis and the resultant map was to determine whether we could find common factors or patterns in the cases which could be linked to the psychological competence, relatedness and autonomy of project participants.

We extracted qualitative quotations or statements from the cases which referred to positive or negative REDD+ project outcomes (Table 1, Appendix 1). We were cognisant of the need for care when inferring a general meaning from statements or quotations unless the sampling framework is representative of the population or community (c.f. Atmadja and Sills 2016). Hence, we used the extracts as 'signals' that the authors considered an issue to be important. The units of analysis of this study therefore became the findings of the authors, in a case study of REDD+, in a specific country. Inevitably, some countries (e.g. Indonesia, Nepal), feature in the REDD+ literature more than others. Accordingly, we also collated the number of countries in which a particular outcome became apparent.

A re-reading of the extracts in the context of each case suggested that they could be classified into the three themes and then coded as belonging to three, three and two sub-themes which referred to the three main themes, respectively. For the theme 'competence', improved or reduced opportunities for livelihood opportunities were coded as '+C' or '−C', respectively. Participants' positive or negative perception of the usefulness of technology supplied to them was coded as '+T' or '−T'. The adequacy or inadequacy of financial compensation was coded as '+Fin' or '−Fin'. For the theme 'relatedness', the extracts were also coded as three sub-themes, i.e. as equity or inequity in benefit distribution or participation (+Eq or −Eq), inclusion or exclusion from project activities (+Inc or −Inc), or changes to the trust (+Tr or −Tr) between stakeholders. For the theme 'autonomy', extracts were collated as two sub-themes i.e. as reflecting voluntary participation or coercion (+Vol or −Vol) and attempts by governments or other stakeholders to improve or reduce participants' property rights (+P or −P). As a final step, we synthesised our results as a thematic map of the as sub-themes which captured the relationship between the sub-themes and the three main SDT themes.

Several of these codes could be applied to more than one theme. For example, coercion could reduce participants' relatedness and their autonomy. Also, the extracts and our coding do not imply causality, i.e. that REDD+ projects had actually caused the negative outcomes. Underlying social factors may have contributed, or the projects may have exacerbated existing situations such as unstable governance. However, negative outcomes indicate how well-intentioned and well-planned projects may have unexpected outcomes and these outcomes become more important if they can be found to occur in more than one context or country.

As examples of our coding, an extract from Atela et al (2015, in Kenya), that '... has not met community expectations because of the opportunity costs imposed by restricted forest access'. was coded as code '−C', i.e. a restriction to livelihood activities. The problem of complex or inappropriate technology (code −T) was exemplified by an extract from Sanders et al. (2017, in Indonesia), that 'we don't want to accept it because it is too difficult'. The risk of accepting financial compensation for surrendering existing rights (code −Fin) was described by Khatri et al. (2017, in Nepal), as 'imposing risks for households with very little resources'.

We coded inequity in benefit distribution (code −Eq) for an extract from Williams and Dupuy (2019, in Vietnam), which noted that 'corruption risks relating to rightful landowners not receiving a fair proportion of benefits due to inadequate consultation were high'. An extract from Satyal et al. (2018, in Nepal), that 'Dalits[1] were excluded from decision making… due to… lack of information and communication…' was coded as a typical example of exclusion from project activities (code −Inc). Trust between project participants was characterised by extracts which indicated a very low level of trust (code −TR) between participants and government agencies. For example, Dawson et al. (2018, in Uganda), noted that: 'The locals don't agree, the trust isn't developed … so when you go back after 2-10 or 15 years, and see the forest has been burnt down'.

We found an example of coercion (code −Vol) in Massarella et al. (2018, in Tanzania), that 'other actors blamed the 'top-down' approach of REDD+ convincing people to do whatever they want them to do'. An example of a potentially adverse effect on property rights (code −P) was found in West (2018, in Brazil), that 'the 5 percent of community members who did not

[1] In Nepal, Dalits are one of the lower social castes.

support the REDD + projects were mainly from one village that still profited from illegal logging'.

After coding the extracts, we collated them into sub-themes (Table 1, Appendix 1). We then checked our coding to ensure that the text of the codes expressed the original intent of the authors. Finally, we synthesised the results as a thematic map which became the basis of our assessment of the effect of the sub-themes (in their positive and negative states) on the main themes of competence, relatedness and autonomy.

4. Results: The incidence and nature of coded extracts and their relationship to sub-themes and themes

The most striking result of coding the extracts was the unambiguous manner in which negative comments were expressed. For example, the use of language such as 'increased hardship', 'intimidation' and 'a feeling of injustice' indicates that authors felt that these problems should be urgently addressed. Positive outcomes (e.g. that 'payments... reflect local norms') were more mildly expressed, probably because that particular project was successful, in that aspect at least. However, the frequency of both positive and negative coded extracts reflects the collective lessons which have emerged from REDD+ projects.

In the 46 cases, in 18 countries overall, we found 39 references to participants' competency, 31 outcomes related to participants' relatedness, and 28 outcomes related to participants' autonomy (Table 1, Appendix 1). This data is presented as the incidence of positive and negative outcomes (separately) and as a percentage of the 46 cases. There was wide variation in the state (positive or negative of the sub-coded extracts which were collated into the sub-

themes. The percentage of extracts which were coded as indicating a positive project outcome (e.g. voluntary participation) ranged between 0-7 percent of the total of the 46 cases. The percentage of extracts which were coded as indicating a deleterious project outcome ranged between 11-33 percent of the 46 cases. The validity of the subthemes is supported by the consistent manner in which they are mentioned in the cases, i.e. in a range of 17-37 percent of the 46 cases. Also, across countries, the incidence of the coded extracts was consistently high, i.e. a range of 7-13 of the 18 countries (Table 1).

Table 1. Results of coding extracts from 46 cases into sub-themes and themes and the number of countries from which the coded extracts were derived

(insert Table 1 here)

4.1 Depicting the thematic analysis as a map

Depicting the thematic analysis as a map captured the broader relationship between the sub-themes and the three main themes (Figure 1).

(Insert Figure 1 here)

Figure 1. Thematic map depicting the relationship between the three main themes and the eight sub-themes. Sub-themes printed in italics are pre-requisites for a successful REDD+ project. Sub-themes printed in normal font are more open to negotiation between project managers and participants.

From the perspective of an individual participant, the map depicts the 'lessons' from the REDD+ cases. The map shows the influence of improved or restricted livelihood opportunities on participants' competence or mastery of their livelihoods. New technology is only useful if it assists participants to develop their livelihoods. Participants' perspective on PES depends on whether it is less than the opportunity cost of existing livelihood activities or it enables participants to branch out into other livelihood activities. In the latter case their competence or mastery of their livelihood activities is increased. In terms of relatedness, the equitable distribution of benefits, a feeling that other participants are trustworthy and being included in REDD+ planning and implementation are all likely to improve participants' ability to liaise and cooperate with the wider community. Collective action becomes possible. Similarly, voluntary participation in REDD+ activities and improvements rather than restrictions to property rights perceive that they are the origin of their choices and decisions.

5. Discussion: Implications of the thematic analysis for REDD+ projects

For REDD+ planning and implementation, the sub-themes act as a cautionary tale. In terms of SDT, the evidence indicates that REDD+ activities may affect individual participants positively towards intrinsic motivation and a higher level of self-determination. Negative experiences shift participants or groups the other way, towards extrinsic motivation and an external locus of causality. The force of some participants' comments, e.g. 'we decide what is good for us, you don't come from the coastland telling us this should be good for you', (Airey and Krause 2018, p.62) provides an authenticity which is hard to reject.

Although the influence of the sub-themes can be analysed separately, except for technology, they clearly influence each other. For example, the degree of trust between participants

329 influences their willingness to cooperate. The cases suggest that four sub-themes, i.e. trust,
330 inclusion, equity and voluntary participation are pre-requisites for a successful REDD+ project.
331 Non-government organisations can build trusting relationships with government officials and
332 local people (c.f. Harada et al. 2015). Participatory extension activities can ensure equity and
333 inclusion of all stakeholders (c.f. Jindal et al. 2012; Saeed 2018), and this results in voluntary
334 participation (c.f. Vatn et al. 2017). If these sub-themes are positive, participants' intrinsic
335 motivation for participation or collective action may be increased. In terms of the Cancun
336 safeguards, the need for 'free prior and informed consent' (FPIC), and the general ethical
337 consideration of 'do no harm', we regard a positive state for these sub-themes as a prerequisite.
338 This leaves the other three sub-themes, PES, improvements to livelihood opportunities and
339 property rights as the three main sub-themes open to negotiation between participants and
340 project managers.
341
342 **5.1 The effect of PES on participants' competence**
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344 The effectiveness of PES in REDD+ projects is complicated by the lack of a robust
345 methodology for calculating costs and benefits (Rakatama et al. 2017). As defined by Ishihara
346 et al. (2017), preconditions for PES to be successful are mutual trust, reliability in payments,
347 secure land tenure (Wunder 2013), additionality (Garbach et al. 2012), and credible institutions
348 (Jespersen and Gallemore 2017). Ensuring that all these conditions are met has often proved to
349 be elusive.
350
351 Evidence from Costa Rica and Indonesia (c.f. Rakatama et al. 2018; (Rosendal and Schei 2014,
352 respectively) suggests that participants' acceptance of PES depends on their socio-economic
353 circumstances and that participants are more concerned with costs rather than benefits (Sheng

et al. 2017, Rakatama 2017; Kohl et al. 2020; Rakatama et al. 2020). This particularly applies to poor families (Pokorny et al. 2013) and situations where participants' use of the forest has been reduced without adequate compensation (c.f. Twongyirwe 2015; Chomba 2016; Ramcilovic and Suominen 2019). A further complication is that some participants prefer cash payments (c.f. (Jacob and Brockington 2018 whereas others prefer improvements to community infrastructure (Rakatama et al. 2018; Holmes 2018).

Even nationally funded PES schemes can prove to be vulnerable. In recent years, PES proved highly successful in conserving forest in Ecuador but a financial crisis in 2015 caused payments to be suspended. Large-scale deforestation soon followed (Etchart et al. 2020). A further recurrent problem for PES is that equitable benefit distribution is all too infrequent (c.f. Pascual et al. 2014; Duong and de Groot 2018; Andersson et al. 2018; Benjamin et al. 2018). Participants' relatedness consequently suffers. With cash payments, there is also a risk of eroding or 'crowding out' intrinsic motivation for innovation and experimentation (Muradian et al. 2013; Hayes et al. 2015; Howson 2018).

Costa Rica's PES scheme is credited with protecting remaining natural forest and encouraging reforestation. However, financing is provided through taxes and supported by legislation (Wallbott et al. 2019). In contrast, REDD+ requires external funding and requires political cooperation at many levels (Sills and Mattson, 2014). This introduces the risk of corruption and dilution of payments to local participants (c.f. Khatri et al. 2017; Sander et al. 2017; Samndong 2018).

For the distribution of benefits to individual households or communities, we see the element of choice as being essential. As an extension of Rakatama et al. (2018a) that households should be closely involved in PES distribution, we suggest that including technology (e.g. training and

capacity building) may assist PES to be more effective. For example, agroforestry crops such as cacao and coffee are popular in many tropical countries. However, farmers often lack training, fertilizer and genetically improved plants. Technology transfer also improves participants' mastery over their livelihoods and their intrinsic motivation to succeed. The lesson from the Landcare program in the Philippines is that technology transfer succeeds when it encourages farmers to choose technology which suits their needs. As markets change, farmers' needs also change and they select aspects of technology to make their own 'recipe' for farm improvements (Cramb and Culasero 2003; Newby and Cramb 2011). Hence, if technology is to be included with PES, responsive, farmer-first and long-term assistance may be required. Capacity building and technology transfer may have a more permanent effect than the ephemeral effect of cash payments. This may ameliorate the worst-case scenario described by Howson (2018) of villagers in Indonesia wasting PES payments because they are not familiar with managing money.

5.2 The effect of trust, inclusion and equity on participants' relatedness

Exclusion from project activities, inequitable benefit distribution and a lack of trust between stakeholders, all act to reduce participants' relatedness. In the REDD+ literature, McCall (2016) interpreted landscape in terms of 'social space', rather than physical space. We concur, and we acknowledge that as proposed by Reineke and Blum (2018) that physical landscapes can be large or small. The evidence from REDD+ clearly indicates the difficulty of increasing landscape scale – together with the consequent number of stakeholders – and maintaining mutual respect between stakeholder groups. Social differences are likely to emerge as landscape scale increases and relatedness consequently suffers. These findings are consistent with group theory first proposed by Cooley (1909) that as group size increases, deviance

amongst ordinary members is more likely and difficult to control. For project planners, our conclusion is that a key challenge is to determine the set of stakeholders who have the social cohesion to allow them to work together. The trade-off between improved social cohesion which conserves forest at one project site and shifting deforestation elsewhere, will remain. However, the presence of 'free riders' or disaffected community members precludes successful collective action.

5.3 The effect of voluntary participation and property rights on participants' autonomy

For project participants, coercion can come in several forms. If people do not participate, they may lose forest usufruct rights and livelihood autonomy to other participants. The tendency by governments to use programs such as REDD+ as a hidden agenda to increase control over traditionally managed land (c.f. Eilenberg 2018), also coerces people to participate, even if just to maintain their existing rights. As described by Satyal et al. (2018) this can invoke a passive 'smile' type of reluctant acquiescence. Coercion for participants to accept benefits as finance for micro-enterprises can also result in a loss of family assets if the enterprise fails (c.f. LICADHO 2019). The problem is that coercion prevents autonomy in livelihood choice, and this reduces the intrinsic motivation that comes with an internal locus of causality. In the same manner as capacity building and technology transfer improves participants' competence, we suggest that these two forms of assistance may improve participants' autonomy. Participants' traditional reluctance to surrender existing forest usufruct rights indicates that this assistance may be required in the medium to long term.

6. Conclusion

In this paper, we have used SDT and a thematic analysis to interpret the results of REDD+ case studies to show how the ability of project participants to succeed at challenging tasks, liaise productively with other people and choose and initiate courses of action can be affected. The limitation of this research is that participants' intrinsic motivation is only one of the factors needed to make REDD+ succeed. Finance, MRV and the need for 'additionality' regarding he amount of carbon captured, all act as factors which must be optimised. However, the vehemence of some participants' comments indicates that while intrinsic motivation may not be sufficient to make REDD+ succeed, extrinsic motivation and apathy may cause it to fail. Further research is needed to understand the mindset of individual participants or groups of participants and how their concerns might be addressed. We suggest that the REDD+ agenda of capturing carbon and preserving biodiversity may be irrelevant to impoverished farmers. Forest and trees are likely to be of interest to these people only in so far as they relate to their livelihoods. In technical terms, a re-ordering of REDD+ objectives away from PES, large-scale and multi-stakeholder projects *per se*, may be warranted. In social-science terms, assisting participants' competency, relatedness and autonomy via livelihood development may also be necessary. Applying psychosocial theory to project design and implementation may avoid negative and potentially negative and long-term outcomes on the psychological well-being of client participants.

448 **References**

449

450 Agrawal A, Nepstad D, Ashwini C (2011) Reducing emissions from deforestation and forest
451 degradation. Annual review of environment and resources 36: 373-396
452 doi:10.1146/annurev-environ-042009-094508

453

454 Airey S, Krause, T (2018) Georgetown ain't got a tree. We got the trees"—Amerindian
455 Power & Participation in Guyana's Low Carbon Development Strategy. In: Corbera E,
456 Schroeder H (eds) REDD+ crossroads plus Paris: Politics, Lessons and Interplays pp 50-73
457 doi:10.3390/f8030051

458

459 Andersson KP, Smith SM, Alston LJ, Duchelle AE, Mwangi E, Larson AM, de Sassi C, Sills,
460 EO, Sunderlin WO, Wong GY (2018). Wealth and the distribution of benefits from tropical
461 forests: Implications for REDD+. Land Use Policy 72: 510-522
462 https://doi.org/10.1016/j.landusepol.2018.01.012.

463

464 Andrews J, Mulder MB (2018) Cultural group selection and the design of REDD+: Insights
465 from Pemba. Sustainability Science 13: 93-107
466 https://doi.org/10.1007/s11625-017-0489-2.

467

468 Angelsen A, Martius C, De Sy, V, Duchelle, AE, Larson, AM, Pham, TT (1918) REDD+ enters
469 its second decade. In: Angelsen A, Martius C, De Sy V, Duchelle AE, Larson AM and Pham
470 TT (eds) Transforming REDD+: Lessons and new directions. Bogor, Indonesia: CIFOR. pp 1-
471 16

472

473 Atela JO, Quinn CH, Minang PA (2014). Are REDD projects pro-poor in their spatial
474 targeting? Evidence from Kenya. Applied Geography 52: 14-24
475 http://dx.doi.org/10.1016/j.apgeog.2014.04.009.
476
477 Atmadja SS, Sills EO (2016) What is a 'community perception of REDD+? A systematic
478 review of how perceptions of REDD+ have been elicited and reported in the future. PLoS
479 ONE11: e0155636.doi:10:1371/journal.
480
481 Baynes J, Herbohn J, Dressler W, Gregorio N (2016) Power relationships: Their effect on
482 community forestry in the Philippines. Land Use Policy 54: 169-176
483 http://dx.doi.org/10.1016/j.landusepol.2016.01.008.
484
485 Benjamin EO, Oreoluwa O, Buchenrieder G (2018) Does an agroforestry scheme with
486 payment for ecosystem services (PES) economically empower women in Sub-Saharan
487 Africa? Ecosystem Services 31: 1–11 https://doi.org/10.1016/j.ecoser.2018.03.004.
488
489 Blanchard CM, Amiot CE, Perreault S, Vallerand RJ (2009) Cohesiveness, coach's
490 interpersonal style and psychological needs: Their effects on self-determination and athletes'
491 subjective well-being. Psychology of Sport and Exercise, 10: 545-551
492 doi:10.1016./j.psychsport.2009.02.005
493
494 Boer HJ (2018) The role of government in operationalising markets for REDD+ in Indonesia.
495 Forest Policy and Economics 86: 4-12 http://dx.doi.org/10.1016/j.forpol.2017.10.004.
496

Boer HJ (2019) Deliberative engagement and REDD+ in Indonesia. Geoforum 104: 170–180 https://doi.org/10.1016/j.geoforum.2019.04.025.

Bonn Challenge (2018) The challenge. http://www.bonnchallenge.org/content/challenge. Accessed 18 November 2018.

Börner J, West TAP (2018) National and subnational forest conservation policies: What works, what doesn't. In: Angelsen A, Martius C, De Sy V, Duchelle AE, Larson AM and Pham TT (eds) Transforming REDD+: Lessons and new directions. Bogor, Indonesia: CIFOR. pp 105-116.

Braun C, Clarke V (2006) Using thematic analysis in psychology, Qualitative Research in Psychology 3: 77-101 https://doi.org/10.1191/1478088706qp063oa.

Chomba S, Kariuki J, Lunda JF, Sinclair F (2016) Roots of inequity: How the implementation of REDD+ reinforces past injustices. Land Use Policy 50: 202-213 http://dx.doi.org/10.1016/j.landusepol.2015.09.021.

Cooley CH (1909) Social organization: A study of the larger mind. Charles Scribner's Sons, New York, pp. 23-31

Cramb RA, Culasero Z (2003) Landcare and livelihoods: The promotion and adoption of conservation farming systems in the Philippine uplands. International Journal of Agricultural Sustainability 1: 141-154

Dawson NM, Mason M, Mwayafuc DM, Dhunganad H, Satyala P, Fisher JA, Zeitouna M, Schroeder H (2018) Barriers to equity in REDD+: Deficiencies in national interpretation processes constrain adaptation to context. Environmental Science and Policy 88: 1-9 https://doi.org/10.1016/j.envsci.2018.06.009.

Deci EL, Ryan RM (1985. Intrinsic motivation and self-determination in human behaviour. New York: Plenum.

Deci EL, Ryan RM, Gagné M, Leone DR, Usunov J, Kornazheva BP (2001) Need satisfaction, motivation, and well-being in the work organisation of a former eastern bloc country: A cross-cultural study of self-determination. Personality and Social Psychology Bulletin, 27: 930-942

Deci EL, Ryan RM (2002) Handbook of self-determination research. Rochester, NY: University of Rochester Press.

Duchelle AE, de Sassi C, Sills EO, Wunder S (2018) Well-being impacts of REDD+ on the ground. In: Transforming REDD+: lessons and new directions. Angelsen A, Martius C, de Sy V, Duchelle AV, Larson AM, Pham TT (eds) CIFOR, Bogor, Indonesia, pp 131-143

Duong NTB, de Groot WT (2018) Distributional risk in PES: Exploring the concept in the payment for environmental forest services program, Vietnam. Forest Policy and Economics 92: 22-32 https://doi.org/10.1016/j.forpol.2018.03.008.

546 Eilenberg M (2015) Shades of green and REDD: Local and global contestations over the
547 value of forest versus plantation development on the Indonesian forest frontier. Asia Pacific
548 Viewpoint, 56: 48-61 doi: 10.1111/apv.12084.
549
550 Emery AA, Heath NL, Mills DJ (2016) Basic psychological need satisfaction, emotion
551 dysregulation and non-suicidal self-injury engagement in young adults: An application of
552 self-determination theory. Journal of Youth Adolescence 45: 612-623 doi:101007/s10964-
553 015-0405-y.
554
555 Enrici AM, Hubacek K (2018) Challenges for REDD+ in Indonesia: A case study of three
556 project sites. Ecology and Society 23: 2-7 https://doi.org/10.5751/ES-09805-230207
557
558 Etchart N, Freire JL, Holland M, Jones KW, Naughton-Treves L (2020) What happens when
559 the money runs out? Forest outcomes and equity concerns following Ecuador's suspension of
560 conservation payments. World Development 136: 105-124.
561 https://doi.org/10.1016/j.worlddev.2020.105124.
562
563 Fisher JA, Cavanagh CJ, Sikor T, Mwayafu DM (2018) Linking notions of justice and project
564 outcomes in carbon offset forestry projects: Insights from a comparative study in Uganda.
565 Land Use Policy 73: 259-268 https://doi.org/10.1016/j.landusepol.2017.12.055
566
567 Fischer R, Hargita Y, Günter S (2016) Insights from the ground level? A content analysis
568 review of multi-national REDD+ studies since 2010. Forest Policy and Economics 66: 47-58
569 http://dx.doi.org/10.1016/j.forpol.2015.11.003.
570

571 Fischer K, Hajdu F (2018) The importance of the will to improve: how 'sustainability'
572 sidelined local livelihoods in a carbon-forestry Investment in Uganda. Journal of
573 Environmental Policy and Planning 20: 328–341
574 https://doi.org/10.1080/1523908X.2017.1410429.
575
576 Gagné M, Forest J, Vansteenkiste M, CrevierBraud, L, van den Broeck A, Aspeli AK (2015).
577 The multidimensional work motivation scale: Validation evidence in seven languages and
578 nine countries. European Journal of Work and Organizational Psychology 24: 178-196 doi:
579 10.1080/1359432X.2013.877892.
580
581 Garbach K, Lubell M, De Clerck FAJ (2012) Payment for Ecosystem Services: The roles of
582 positive incentives and information sharing in stimulating adoption of silvopastoral
583 conservation practices. Agriculture, Ecosystems and Environment 156: 27-36
584 http://dx.doi.org/10.1016/j.agee.2012.04.017.
585
586 Gauthier M (2018) Mai-Ndombe: Will the REDD+ laboratory benefit indigenous peoples and
587 local communities? Rights and Resources Initiative. Washington DC.
588 www.rightsandresources.org.
589
590 Gollwitzer PM, Kappes HB, Oettingen G (2012) Needs and incentives as sources of goals. In
591 goal-directed behaviour. Aarts H, Ellio AJ (eds). Psychology Press, Taylor and Francis, New
592 York.
593
594 Groom B, Palmer C (2012) REDD+ and rural livelihoods. Biological Conservation 154: 42-
595 52 http://dx.doi.org/10.1016/j.biocon.2012.03.002.

Guadalupe VEL, Sotta VF, Santos LJG, Aguiar M, Vieira CP, de Oliveira CP, Siqueira JVN (2018) REDD+ Implementation in a high forest, low deforestation area: Constraints on monitoring forest carbon emissions. Land Use Policy 76: 414-421. https://doi.org/10.1016/j.landusepol.2018.02.015.

Gurung J, Setyowati AB (2012) Re-envisioning REDD+ gender, forest governance and REDD+ in Asia. rightsandresources.org Washinton DC, USA https://rightsandresources.org/wp-content/exported-pdf/brief4gurungsetyowati.pdf.

Harada K, Prabowo D, Aliadi A, Ichihara J, Ma HO (2015) How can social safeguards of REDD+ function effectively to conserve forests and improve local livelihoods? A case from Meru Betiri national park, East Java, Indonesia. Land. doi:10.3390/land40x000x. https://www.mdpi.com/journal/land.

Hayes T, Murtinho F, Camacho LMC, Crespo, P, McHugh S, Salmerón D (2015) Can conservation contracts co-exist with change? Payment for ecosystem services in the context of adaptive decision-making and sustainability. Environmental Management 55: 69-85 doi 10.1007/s00267-014-0380-1.

Hitlin S (2007) Time, self, and the curiously abstract concept of agency. Sociological Theory, 25: 179-191

Hoang C, Satyal P, Corbera E (2018) 'This is my garden': Justice claims and struggles over forests in Vietnam's REDD+. Climate Policy 19: 23-35

621 doi: 10.1080/14693062.2018.1527202
622
623 Holmes I, Potvin C, Coombes OT (2018) Early REDD+ implementation: The journey of an
624 indigenous community in Panama. In: Corbera E, Schroeder H. (eds) REDD+ crossroads plus
625 Paris: Politics, Lessons and Interplays pp 229-246. doi:10.3390/f8030067.
626
627 Howard J, Gagné M, Morin A.S, and Van den Broeck A (2016) Motivation profiles at work:
628 A self-determination theory approach. Journal of Vocational Behaviour 95: 74-89.
629
630 Howson P (2018) Slippery violence in the REDD+ forests of central Kalimantan, Indonesia.
631 Conservation and Society 16: 136-146 doi: 10.4103/cs.cs_16_150.
632
633 Ishihara H, Pascual, U, Hodge I (2017) Dancing with storks: The role of power relations in
634 payments for ecosystem services. Ecological Economics 139: 45–54
635 http://dx.doi.org/10.1016/j.ecolecon.2017.04.007.
636
637 Jacob T, Brockington D (2017) Learning from the other: Benefit sharing lessons for REDD+
638 implementation based on CBFM experience in northern Tanzania. Land Use Policy Advance
639 online publication. http://dx.doi.org/10.1016/j.landusepol.2017.10.028.
640
641 Janki M (2009) Case Study: Guyana. In: Costenbader J. (ed) Legal frameworks for REDD:
642 design and implementation at the national level. IUCN, Gland, Switzerland.
643

644 Jespersen K, Gallemore C (2018) The institutional work of payments for ecosystem services:
645 Why the mundane should matter. Ecological Economics 146: 507-519
646 https://doi.org/10.1016/j.ecolecon.2017.12.013.
647
648 Jindal R, Ker, JM, Carter S (2012) Reducing poverty through carbon forestry? Impacts of the
649 N'hambita community carbon project in Mozambique. World Development 40: 2123-2135
650
651 Kabeer N (2005) Gender equality and women's empowerment: A critical analysis of the Third
652 Millennium Goals. Gender & Development 13: 13-24
653
654 Kansanga MM, Luginaah I (2019) Agrarian livelihoods under siege: Carbon forestry, tenure
655 constraints and the rise of capitalist forest enclosures in Ghana. World Development 113:
656 131–142 https://doi.org/10.1016/j.worlddev.2018.09.002 0305-750X/2.
657
658 Khatri DB, Marquardt K, Pain A, Ojha O (2018) Shifting regimes of management and uses of
659 forests: What might REDD+ implementation mean for community forestry? Evidence from
660 Nepal. Forest Policy and Economics 92: 1-10 https://doi.org/10.1016/j.forpol.2018.03.005.
661
662 Köhl M, Neupane PR, Mundhenk P (2020) REDD+ measurement, reporting and verification
663 – A cost trap? Implications for financing REDD+MRV costs by result-based payments.
664 Ecological Economics 168: 106513 https://doi.org/10.1016/j.ecolecon.2019.106513
665
666 Konsager R, Corbera E (2015) Linking mitigation and adaptation in carbon forestry projects:
667 Evidence from Belize. World Development 76: 132–146
668

669 Korhonen-Kurki KM, Brockhaus M, Muharrom E, Juhola S, Moeliono M, Maharani C,
670 Dwisatrio B (2017) Analyzing REDD+ as an experiment of transformative climate
671 governance: Insights from Indonesia. Environmental Science and Policy 73: 61-70
672 http://dx.doi.org/10.1016/j.envsci.2017.03.014.
673
674 La Rose J (2013) Guyana: Indigenous peoples and the lack of adequate consultation on
675 REDD+. In: REDD+ safeguards: More than good intentions? Case studies from the Accra
676 Caucus. Accra Caucus on Forests and Climate Change. pp. 8-11
677
678 Lepper MR, Greene D, Nisbet, RE (1973) Undermining children's intrinsic interest with
679 extrinsic rewards: A test of the "Overjustification" Hypothesis. Journal of Personality and
680 Social Psychology 28: 129-137
681
682 Lestrelin G, Trockenbrodt M, Phanvilay K, Thongmanivong S, Vongvisouk T, Pham TT,
683 Castella J-C (2013) The context of REDD+ in the Lao People's Democratic Republic:
684 Drivers, agents and institutions. Occasional Paper 92. Bogor, Indonesia: CIFOR
685
686 LICADHO (Cambodian League for the Promotion and Defense of Human Rights) (2019)
687 Collateral damage: Land loss and abuses in Cambodia's microfinance sector. Accessed 7
688 October 2019.
689
690 Luintel H, Bluffstone RA, Scheller RM (2018) An Assessment of collective action drivers of
691 carbon storage in Nepalese forest commons. Forest Policy and Economics 90: 39-47
692 https://doi.org/10.1016/j.forpol.2018.01.012.
693

694 Lund JF, Sungusia E, Mabele MB, Scheba A (2017) Promising change, delivering continuity:
695 REDD+ as conservation fad. World Development 89: 124-139.
696 http://dx.doi.org/10.1016/j.worlddev.2016.08.005.
697
698 Massarella K, Sallu, SM, Ensor JE, Marchant R (2018) REDD+, hype, hope and
699 disappointment: The dynamics of expectations in conservation and development pilot
700 projects. World Development 109: 375-385. https://doi.org/10.1016/j.worlddev.2018.05.006.
701
702 McCall MK (2016) Beyond ‘‘landscape” in REDD+: The imperative for ‘‘territory”. World
703 Development, 85: 58-72 http://dx.doi.org/10.1016/j.worlddev.2016.05.001.
704
705 Maguire M, Delahunt B (2017) Doing a thematic analysis: A practical step-by-step guide for
706 learning and teaching scholars. All Ireland Journal of Teaching and Learning in Higher
707 Education 8: 3351-3364 https://ojs.aishe.org/index.php/aishe-j/article/view/335
708
709 Moller AC, Deci EL, Ryan RM (2006) Choice and ego-depletion: The moderating role of
710 autonomy. Personality and Social Psychology Bulletin 32: 1024-1036
711
712 Muradian R, Arsel M, Pellegrini L, Adaman F, Aguilar B, Agarwal B, Corbera E, Ezzine de
713 Blas D, Farley J, Froger G, Garcia-Frapolli E, Gómez-Baggethun E, Gowdy J, Kosoy N, Le
714 Coq JF, Leroy P, May P, Méral P, Mibielli P, Norgaard R, Ozkaynak B, Pascual U, Pengue
715 W Perez, M, Pesche D, Pirard R, Ramos-Martin J, Rival L, Saenz F, Van Hecken G, Vatn A,
716 Vira B, Urama K (2013) Payments for ecosystem services and the fatal attraction of win-win
717 solutions. Conservation Letters 6: 274-279. doi:10.1111/j.1755-263X.2012.00309.x.
718

719 Muttaqin MZ, Alviya I, Lugina M, Hamdani FAU, Indartik (2019) Developing community-
720 based forest ecosystem service management to reduce emissions from deforestation and
721 forest degradation. Forest Policy and Economics 108.
722 https://doi.org/10.1016/j.forpol.2019.05.024.
723
724 Mwayafu DM, Kisekka JM (2012) Promoting and implementing REDD+ safeguards at
725 national level in East Africa. REDD-Net.
726 http://www.ugandacoalition.or.ug/sites/default/files/REDD%2B%20safeguards20at%20natio
727 nal%20level%20in%20East%20Africa%20web.pdf
728
729 Nantongo MG (2017) Legitimacy of local REDD+ Processes. A comparative analysis of Pilot
730 projects in Brazil and Tanzania. Environmental Science and Policy 78: 81-88
731 http://dx.doi.org/10.1016/j.envsci.2017.09.005.
732
733 Nathan I, Pasgaard M (2017) Is REDD+ effective, efficient, and equitable? Learning from a
734 REDD+ project in northern Cambodia. Geoforum 83: 26-38
735 http:// dx.doi.org/10.1016/j.geoforum.2017.04.020.
736
737 Ojha HR, Cameron J, Kumar C (2009) Deliberation or symbolic violence? The governance of
738 community forestry in Nepal. Forest Policy and Economics 11: 365-374
739
740 Pascual P, Phelps J, Garmendia E, Brown K, Corbera E, Martin A, Gomez-Baggethun E,
741 Muradian R (2014) Social equity matters in payments for ecosystem services. BioScience 64:
742 1027-1036 doi:10.1093/biosci/biu146.
743
744 Pearse R, Dehn J, (2011) In the redd: Australia's carbon offset project

745 in Central Kalimantan. Friends of the Earth International. Netherlands, Amsterdam.
746
747 Newby J, Cramb RA (2011) Economic impacts of conservation farming in a marginal
748 environment: The case of 'Landcare' in the Philippines. International Journal of Agricultural
749 Sustainability 9: 456-470 doi: 10.1080/14735903.2011.583479
750
751 Pedroni L, Dutschke M, Streck C, Porrúa ME (2009) Creating incentives for avoiding further
752 deforestation: the nested approach. Climate Policy 9: 207-220
753 https://doi.org/10.3763/cpol.2008.0522
754
755 Pelletier J, Horning N, Laporte N, Samndong RA, Goetz S (2018) Anticipating social equity
756 impacts in REDD+ policy design: An example from the Democratic Republic of Congo.
757 Land Use Policy 75: 102-115. https://doi.org/10.1016/j.landusepol.2018.03.011.
758
759 Pokorny B, Scholz I, de Jong, (2013) REDD+ for the poor or the poor for REDD+? About
760 the limitations of environmental policies in the Amazon and the potential of achieving
761 environmental goals through pro-poor policies. Ecology and Society 18 (2):
762 http://dx.doi.org/10.5751/ES-05458-180203
763
764 Poudel DP (2018). Are traditional and modern forestry institutions complementary or do they
765 prescribe contradictory rights in Trans-Himalayan Nepal? A lesson to be learned for REDD+
766 implementation. Norsk Geografisk Tidsskrift - Norwegian Journal of Geography
767 72: 13-26 doi: 10.1080/00291951.2017.1413418.
768

769 Rakatama A, Pandit R, Ma C, Iftekhar S (2017) The costs and benefits of REDD+: A review
770 of the literature. Forest Policy and Economics 75: 103–111
771 http://dx.doi.org/10.1016/j.forpol.2016.08.006.
772
773 Rakatama A, Pandit R, Iftekhar S, Ma C (2018) How to design more effective REDD+
774 projects – The importance of a targeted approach in Indonesia. Journal of Forest Economics
775 33: 25-33
776
777 Rakatama A, Iftekhar S, Pandit R (2020) Perceived benefits and costs of REDD+ projects
778 under different forest management regimes in Indonesia. Climate and development 12:5 481-
779 493 https://doi.org/10.1080/17565529.2019.1642178.
780
781 Ramcilovic-Suominen S (2019) REDD+ as a tool for state territorialization: Managing forests
782 and people in Laos. Journal of Political Ecology 26: 263-281
783 https://journals.librarypublishing.arizona.edu/jpe/article/2111/galley/2370/view/
784
785 Rezvani A, Khosravi P, Dong L (2017) Motivating users toward continued usage of
786 information systems: Self-determination theory perspective. Computers in Human Behaviour
787 76: 263-275 http://dx.doi.org/10.1016/j.chb.2017.07.032.
788
789 Rodriguez-Ward D, Larson AM, Ruesta HG (2018) Top-down, bottom-up and sideways: The
790 multilayered complexities of multi-level actors shaping forest governance and REDD+
791 arrangements in Madre de Dios, Peru. Environmental Management 62: 98-116 doi
792 10.1007/s00267-017-0982-5.
793

794 Rosendal GK, Schei PJ (2014) How may REDD+ affect the practical, legal and institutional
795 framework for 'Payment for ecosystem services' in Costa Rica? Ecosystem Services 9: 75–82
796
797 Russo S, Stattin H (2017) Self-determination theory and the role of political interest in
798 adolescents' socio-political development. Journal of Applied Developmental Psychology 50:
799 71-78 http://dx.doi.org/10.1016/j.appdev.2017.03.008.
800
801 Ryan RM, Connell JP (1989) Perceived locus of causality and internalisation: Examining
802 reasons for acting in two domains. Journal of Personality and Social Psychology 57: 749-761
803
804 Ryan RM, Deci EL (2000) Self-determination theory and the facilitation of intrinsic
805 motivation, social development and well-being. American Psychologist 55: 58-78
806
807 Sacande M, Berrahmouni N, Hargreaves S (2015) Community participation at the heart of
808 Africa's Great Green Wall restoration map. Unasylva 66: 44-51 www.fao.org./3/i5212e.pdf
809 (fao.org).
810
811 Saeed AR, McDermott C, Boyd E (2018) Examining equity in Ghana's national REDD+
812 process. Forest Policy and Economics 90: 48-58 https://doi.org/10.1016/j.forpol.2018.01.006.
813
814 Sale E, Rodas O, Valenzuela O, Hillbrand A, Sabogal, C (2016) On the way to restore
815 Guatemala's degraded lands: Creating governance conditions. World Development
816 Perspectives 4: 16-18. http://dx.doi.org/10.1016/j.wdp.2016.11.010
817

818 Saito-Jensen M, Rutt RL, Chhetri BBK (2014) Social and environmental tensions:
819 affirmative measures under REDD+ carbon payment initiatives in Nepal. Human Ecology 42:
820 683-694 doi10.1007/s10745-014-9674-4.
821
822 Samndong RA, Bush G, Vatn A, Chapman M (2018) Institutional analysis of causes of
823 deforestation in REDD+ pilot sites in the Equateur Province: Implication for REDD+ in the
824 Democratic Republic of Congo. Land Use Policy (article in press)
825 https://doi.org/10.1016/j.landusepol.2018.02.048.
826
827 Sandbrook C, Nelson F, Adams WM, Agrawal A, (2010) Carbon, forests and the REDD
828 paradox. Oryx 44: 330-334. https://doi.org/10.1017/S0030605310000475.
829
830 Sanders AJP, Hyldmo HS, Prasti RD, Ford HRM, Larson AM, Keenan RJ (2017) Guinea pig
831 or pioneer: Translating global environmental objectives through to local actions in central
832 Kalimantan, Indonesia's REDD+ pilot province. Global Environmental Change 42: 68-81
833 http://dx.doi.org/10.1016/j.gloenvcha.2016.12.003.
834
835 Satyal P, Corbera E, Dawson N, Dhungana H, Maskey G (2018) Representation and
836 participation in formulating Nepal's REDD+ approach, Climate Policy
837 doi:10.1080/14693062.2018.1473752
838
839 Sayer J, Bull G, Elliott C (2008) Mediating forest transitions: 'grand design' or 'muddling
840 through' Conservation and Society 6: 320-327 doi:10.4103/0972-4923.49195
841

842 Sheng J, Wu Y, Zhang M, Miao Z (2017) An evolutionary mapping approach for designing a
843 contractual REDD+ payment scheme. Ecological Indicators 79: 286-295
844 http://dx.doi.org/10.1016/j.ecolind.2017.04.010.
845
846 Shrestha S, Shrestha UB (2017) Beyond Money: Does REDD+ payment enhance household's
847 participation in forest governance and management in Nepal's community forests? Forest
848 Policy and Economics 80: 63-70 http://dx.doi.org/10.1016/j.forpol.2017.03.005.
849
850 Sills EO, Mattsson E (2014) Executive summary. In: REDD+ on the ground: A casebook of
851 subnational initiatives across the globe. (eds) Sills EO, Atmadja SS, de Sassi C, Duchelle AE,
852 Kweka DL, Resosudarmo IAP, Sunderlin WD https://www2.cifor.org/redd-case-book/
853
854 Sunderlin WD, Larson, M, Duchelle AE, Resosudarmo IAP, Huynh, TB, Awono A, Dokken
855 T (2014). How are REDD+ proponents addressing tenure problems? Evidence from Brazil,
856 Cameroon, Tanzania, Indonesia, and Vietnam. World Development 55: 37-52
857 https://doi.org/10.1016/j.worlddev.2013.01.013.
858
859 Thompson MC, Baruah M, Carr ER (2011) Seeing REDD+ as a project of environmental
860 governance. Environ. Sci. Policy 14: 100-110 https://doi.org/10.1016/j.envsci.2010.11.006.
861
862 Trougakos JP, Hideg I, Cheng BK, Beal DJ (2014) Lunch breaks unpacked: The role of
863 autonomy as a moderator of recovery after lunch. Academy of Management Journal 57: 405-
864 421 http://dx.doi.org/10.5465/amj.2011.1072.
865

Twongyirwe R, Sheil D, Sandbrook C, Sandbrook LC (2015) REDD at the crossroads? The opportunities and challenges of REDD for conservation and human welfare in South West Uganda Int. J. Environment and Sustainable Development 14:273–298.

UN-REDD (2018a) Summaries of Information on Safeguards. https://unredd.net/documents/global-programme-191/safeguards-multiple-benefits-297/workshops-and-events-1316/zambia-safeguards-technical-working-group-meeting-may-2018/16809-summaries-of-information-on-safeguards.html.

UN-REDD (2018b) 10th Consolidated Annual Progress Report of the UN-REDD Programme Fund. https://www.unredd.net/documents/programme-progress-reports-785/2018-programme-progress-reports/17258-un-redd-consolidated-2018-annual-report.html. Accessed 17 November 2020

UN-REDD (2020a) About REDD+. https://www.unredd.net/about/what-is-redd-plus.html. Accessed 17 November 2020

UN-REDD (2020b) Safeguards. https://www.unredd.net/knowledge/redd-plus-technical-issues/safeguards.html Accessed 17 November 2020

Vallerand RJ (2000) Deci and Ryan's self-determination theory: A view from the hierarchical map of intrinsic and extrinsic motivation. Psychological Inquiry 11: 312-318

889 Van den Broek A, Ferris DL, Chang CH, Rosen CC (2016) A review of self-determination
890 theory's basic psychological needs at work. Journal of Management 42: 1195-1129 doi:
891 10.1177/0149206316632058
892
893 Vatn A, Kajembe G, Mosia E, Nantongo M, Silayo DS (2017) What does it take to institute
894 REDD+? An analysis of the Kilosa REDD+ pilot, Tanzania. Forest Policy and Economics 83:
895 1-9 http://dx.doi.org/10.1016/j.forpol.2017.05.004.
896
897 Wallbott L, Rosendal GK (2018) Safeguards, standards, and the science-policy interfaces of
898 REDD+: greening land use through forest-based mitigation in Costa Rica? Journal of
899 Environment & Development 27: 99-125 doi: 10.1177/1070496517751716.
900
901 Wallbott L, Siciliano G, Lederer, M (2019) Beyond PES and REDD+: Costa Rica on the way
902 to climate-smart landscape management? Ecology and Society 24: 24-29
903 https://doi.org/10.5751/ES-10476-240124.
904
905 West TAP (2015) Indigenous community benefits from a decentralized approach to REDD+
906 in Brazil. Climate Policy http://dx.doi.org/10.1080/14693062.2015.1058238.
907 doi: 10.1080/14693062.2015.1058238
908
909 West TAP, Börner J, Sills EO, Kontoleon A (2020) Overstated carbon emission reductions
910 from voluntary REDD+ projects in the Brazilian Amazon. Proc. Natl. Acad. Sci. U. S. A.
911 117, 24188-24194
912

913 Williams DA, Dupuy KE (2019) Will REDD+ safeguards mitigate corruption? Qualitative
914 evidence from Southeast Asia, The Journal of Development Studies 55: 2129-2144. doi:
915 10.1080/00220388.2018.1510118
916
917 Work C (2018) Forest islands and castaway communities: REDD+ and forest restoration in
918 Prey Lang Forest. In: Corbera E, Schroeder H. (eds) REDD+ crossroads plus Paris: Politics,
919 Lessons and Interplays pp 247-267. doi:10.3390/f8020047
920
921 Wunder S (2013) When payments for environmental services will work for conservation.
922 Conservation Letters 6: 230-237. doi: 10.1111/conl.12034
923
924 Yasmi Y, Kelley D, Murdiyarso, D, Patel T (2012) The struggle over Asia's forests: An
925 overview of forest conflict and political implications for REDD+. International Forestry
926 Review 14: 99-109.
927
928
929
930
931
932
933
934
935
936
937
938
939

940 Table 1. Results of coding extracts from 46 cases from 18 countries into themes, sub-themes
941 and states
942

Theme	Sub-theme and state (+ or −)	Case study authors and the country in which REDD+ projects were undertaken	Number and percentage of 46 cases for each sub-theme and state
Competence	+C	Groom and Palmer, (2012, China) Vatn et al. (2017, Tanzania) Nathan and Pasgaard, (2017, Cambodia)	3 cases, 7%
	−C	Ramcilovic-Suominen, (2019, Laos) Shrestha and Shrestha, (2017, Nepal) Fisher et al. (2018, Uganda) Atela et al. (2015, Kenya) Pearse and Dehn, (2011, Indonesia) Boer, (2018, Indonesia) Muttaqin et al. (2019, Indonesia) Gauthier, (2018, DR Congo)	8 cases, 17%
	+T		0 cases, 0%
	−T	Airey and Krause,(2018 Guyana) Lund et al. (2017, Tanzania) Massarella et al. (2018, Tanzania) Dawson et al. (2018, Nepal and Uganda) Fischer and Hajdu (2018, Uganda) Pearse and Dehn, (2011, Indonesia) Sanders et al. (2017, Indonesia) Muttaqin et al. (2019, Indonesia) Saeed, (2018, Ghana) Walbott and Rosendal, (2018, Costa Rica) Guadalupe et al. (2018, Brazil)	11 cases, 24%
	+Fin	Jacob and Brockington, (2018, Tanzania) West, (2015, Brazil)	2 cases, 4%
	−Fin	Jindal et al. (2012, Mozambique) Konsager and Corbera, (2015, Belize) Saito-Jensen et al. (2014, Nepal) Khatri et al. (2017, Nepal) Twongyirwe, (2015, Uganda) Fisher et al. (2018, Uganda) Atela et al. (2015, Kenya) Chomba et al. (2016, Kenya) Pelletier et al. (2018, DR Congo) Howson, (2018, Indonesia) Work, (2018, Cambodia) Enrici and Hubacek, (2018, Indonesia) Nathan and Pasgaard, (2017, Cambodia) Saeed, (2018, Ghana) Walbott and Rosendal, (2018, Costa Rica)	15 cases, 33%

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Relatedness	+Eq	Jindal et al. (2012, Mozambique) Vatn et al. (2017, Tanzania) Atela et al. (2015, Kenya)	3 cases, 7%
	−Eq	La Rose, (2013, Guyana) Duong and Groot, (2018, Vietnam) Williams and Dupuy, (2019, Vietnam) Lund et al. (2017, Tanzania) Saito-Jensen et al. (2014, Nepal) Howson, (2018, Indonesia) Dawson et al. (2018, Nepal and Uganda) Boer, (2019, Indonesia) Samndong, (2018, DR Congo) Nathan and Pasgaard, (2017, Cambodia)	10 cases, 22%
	+Inc	Jacob and Brockington, (2018, Tanzania) Satyal et al. (2018, Nepal) Saeed, (2018, Ghana)	3 cases, 7%
	−Inc	Nantongo (2017, Tanzania) Atela et al. (2015, Kenya) Jacob and Brockington, (2018, Tanzania) Massarella et al. (2018, Tanzania) Khatri et al. (2017, Nepal) Satyal et al. (2018, Nepal) Eilenberg, (2018, Indonesia)	7 cases, 15%
	+Tr	Harada et al. (2015, Indonesia) West, (2015, Brazil)	2 cases, 4%
	−Tr	La Rose, (2013, Guyana) Andrews and Mulder, 2018, Tanzania) Luintel et al. (2018, Nepal) Dawson et al. (2018, Nepal and Uganda) Kansanga and Luginaah, (2019, Uganda) Pearse and Dehn, (2011, Indonesia)	6 cases, 13%
Autonomy	+Vol	Vatn et al. (2017, Tanzania)	1 case, 2%
	−Vol	Groom and Palmer, (2012, China) Satyal et al. (2018, Nepal) Airey and Krause,(2018 Guyana) Ramcilovic-Suominen, (2019, Laos) Khatri et al. (2017, Nepal) Massarella et al. (2018, Tanzania) Dawson et al. (2018, Nepal and Uganda) Fischer and Hajdu (2018, Uganda) Chomba et al. (2016, Kenya) Pearse and Dehn, (2011, Indonesia) Eilenberg, (2018, Indonesia) Sanders et al. (2017, Indonesia) Howson, (2018, Indonesia) Enrici and Hubacek, (2018, Indonesia) Work, (2018, Cambodia) Holmes et al. (2018, Panama)	16 cases, 35%
	+P	Nathan and Pasgaard, (2017, Cambodia)	1 case, 2%
	−P	Jindal et al. (2012, Mozambique) Hoang, (2018, Vietnam) Ramcilovic-Suominen, (2019, Laos) Boer, (2018, Indonesia) Vatn et al. (2017, Tanzania) Twongyirwe, (2015, Uganda) Kansanga and Luginaah, (2019, Uganda) Chomba et al. (2016, Kenya) Eilenberg, (2018, Indonesia) West, (2015, Brazil) Gauthier, (2018, DR Congo)	11 cases, 24%

Appendix 1. Extracts from 46 REDD+ case studies which show positive (italics) or negative (normal font) social outcomes, grouped according to three themes, i.e. the SDT needs for competence, relatedness and autonomy. Extracts for the theme 'competence' were coded as reflecting improved opportunities (+C) or restrictions (−C) to livelihood activities, perceived usefulness of technology supplied to participants (+T or −T) and the adequacy or inadequacy of financial compensation (+Fin or −Fin). For the theme of 'relatedness', the extracts were coded as reflecting equity or inequity in benefit distribution or participation (+Eq or −Eq), inclusion or exclusion from project activities (+Inc or −Inc) or changes to the trust (+Tr or −Tr) between stakeholders. For the theme 'autonomy', extracts were coded as reflecting voluntary participation or coercion to participate (+Vol or −Vol) and attempts by governments of other stakeholders to improve or reduce participants' property rights (+P or −P).

Case Study	SDT needs		
	Competence	Relatedness	Autonomy
Groom and Palmer, (2012, China)	The SLCP appeared to restrict autonomy in terms of how households allocated their labour. (p.48) **(+C)**		A lack of autonomy… over land use… may result in unwelcome and unwanted shifts in livelihoods. (p. 51, China) In some places the program was involuntary… (p.49, China) **(−Vol)**
Jindal et al. (2012, Mozambique)	… the most important threat to permanence is the extremely long contract period. …based in a 100 year contract period… (which) subjects future generations to a rule they may not agree with. (p. 2133) **(−Fin)**	*The existence of the community fund has enabled households to better articulate their development needs.* (p.2132) **(+Eq)**	Non-participating households may also face increased hardship from a ban on harvesting from the large tract of miombo forest under REDD activities. (p.2132) **(−P)**
Konsager and Corbera, (2015, Belize)	...projects should have contributed more to surrounding villages by promoting alternative livelihood activities,		

	such as handcrafts... (p. 139) **(−Fin)**		

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958 Appendix 1 cont.

La Rose, (2013, Guyana)		There is much intimidation in getting the leaders to sign the document. (p. 9) **(−Eq)** ...those who dare... are publicly vilified... (p.9), **(−Tr)**	
Airey and Krause,(2018 Guyana)	No one really understand about it... We ain't getting the understanding... (p. 58) **(−T)**		...we decide what is ours, we decide what is good for us, you don't come from the coastland telling us that this should be good for you (p. 62) **(−Vol)**
Duong and Groot, (2018, Vietnam)		Households on one side of the commune boundary may receive a much lower payment ... than those on the other side, even though they may be more active to protect their forest. (p.27) The basic distributional principle… paying the most to households and communities which own the most forest… open to being felt as an injustice… (p.28) **(−Eq)**	
Hoang, (2018, Vietnam)			This...is my garden. I have the legal right to ask everyone to leave it, not only you guys, but also the UN-REDD staff (p.529) **(−P)**
Williams and Dupuy, (2019, Vietnam)		Just over a third of our case interviewees... noted that corruption risks relating to rightful landowners not receiving a fair proportion of benefits due to inadequate consultation were high. (p.2139) **(−Eq)**	

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960 Appendix 1 cont.

Ramcilovic-Suominen, (2019, Laos)	By addressing… small-scale drivers such as subsistence agriculture, REDD+ directly limits villager's main source of livelihoods… (p. 277) **(−C)**		REDD+ acts as a tool for state territorialisation… by… regulate village forest uses and users. (p. 263) **(−P)** (REDD+) advances the Laos political economy, political elite and power establishment. (p. 277) **(−Vol**
Vatn et al. (2017, Tanzania)	*Similarly, quite positive… provision of knowledge, creation of awareness emphasis on village development…* (p.6) **(+C)**	*Payments were equal per person… reflect local norms…* (p.8) **(+Eq)**	…23 out of 240 households had to leave their homes and resettle…there were instances of burned homes. (p.6) **(−P)** *… a large majority felt that they felt free to decide…* **(+Vol)**
Lund et al. (2017, Tanzania)	It took my people by surprise to learn how technical and complex REDD+ is. (p.132) **(−T)**	Tenure conflicts… lack of local governance… were key challenges across projects (p.132) **(−Eq)**	
Nantongo (2017, Tanzania)		Although there was an early socio-economic study to assess the livelihoods of local people… there was no consultation with the locals… **(−Inc)**	
Andrews and Mulder, 2018, Tanzania)		REDD-ready SCC in Pemba vary extensively in the trust that they are viewed by community members… (p.105) **(−Tr)**	
Jacob and Brockington, (2018, Tanzania)	*The availability of carbon revenues has made a material difference to villagers' lives…* (p.6) **(+Fin)**	They (…officials…) attend so many trainings but they don't share. (p.5) **(−Inc)** *…complaints that supporting a school only benefits families with children... If only there were many other villagers with that sort of internal debate.* (p.6) **(+Inc)**	

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962 Appendix 1 cont.

Massarella et al. (2018, Tanzania)	You can pilot and you can forget. But our idea was to do something and then… repeat from there. (p.383) **(−T**)	… a feeling of injustice that the project only benefitted a few people… (p.381) **(−Inc)**	Other actors blamed the 'top-down' approach of REDD+ 'convincing people to do whatever they want them to do'. (p.382) **(−Vol)**
Saito-Jensen et al. (2014, Nepal)	… some recipients viewed the benefits as burdens… the use of payments for higher-value items such as biogas plants may risk inadvertently indebting recipients… (p,689) **(−Fin)**	Targeting of specific social groups resulted in contestation at the local level… This approach resulted in shame and denial by some of those who were labelled as poor. (p.689) **(−Eq)**	
Shrestha and Shrestha, (2017, Nepal)	REDD+ payments do not play a significant part in participation… due to the predefined criteria in the REDD+ payment mechanism. (p.69) **(−C)**		
Khatri et al. (2017, Nepal)	Providing a loan for a market-based activity can actually impose risks for households with very little resources. (p.4) **(−Fin)**	… in some cases, the distribution of pilot money to different social groups did not materialise. (p.4) **(−Inc)**	… it required that the CFUGs invest at least 40% of the payments… as a condition of further payments. (p.4) **(−Vol**)
Satyal et al. (2018, Nepal)		Dalits were excluded from decision making… due to… lack of information and communication… (p.9) **(−Inc)** *… women and Dalits have all actively participated…* (p.8) **(+Inc)**	It has become a passive 'smile' type of participation. (p. 10) **(−Vol**)
Luintel et al. (2018, Nepal)		Mutual trust… is found to have no relation with carbon storage. (p.45) **(−Tr)**	

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964 Appendix 1 cont.

Twongyirwe, (2015, Uganda)	... the funding of REDD+ is so huge that our corrupt officials cannot relay where it is meant to go (p.284) **(−Fin)**		... if REDD+ imposes further controls on the use of forest resources and rewards others, the Batwa may revolt. (p.289 **(−P)**
Dawson et al. (2018, Nepal and Uganda)	It is clear that no-one has a common understanding of REDD+. (p.3) **(−T)**	…. The locals don't agree, the trust isn't developed … so when you go back after 2-10 or 15 years and see the forest has been burnt down. (p.3) **(−Tr)** …participants stressed that inclusion criteria … to ensure marginalised groups participate… were meaningless because their quality of participation was negligible. (p.4) **(−Eq)**	I refer to it as 'climate colonisation'. (p.3) **(−Vol**)
Fisher et al. (2018, Uganda)	…participants are not actively involved in project design… and the project confers restrictions… (p.267) **(−C)** … and they are paying little money and we have sacrificed our land to… … benefit sharing is a myth… (p.264) **(−Fin)**		
Kansanga and Luginaah, (2019, Uganda)		...to get even temporary access to farmland in the forest you have to pass through an influential person using money... (p.138) **(−Tr)**	As I speak, there is no other land to go to... Yet, the GFC taskforce keeps destroying our farms. (p. 137) **(−P)**
Fischer and Hajdu (2018, Uganda)	…favouring of technical …competence… over local knowledge… (p. 337) **(−T)**		… some actors have had the power to impose their will on others (p.329) Communities may resist the project since the NFA used force… (p.332) **(−Vol**)

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966 Appendix 1 cont.

Atela et al. (2015, Kenya)	… this equitable share has not met community expectations because of the opportunity costs imposed by restricted forest access. (p. 247) **(−C)** The (forest service) staff asserted that REDD+ funks linked to the hills would be channelled to central government. (p.246) **(−Fin)**	Even though non-group members may be excluded... (p.242) **(−Inc)** *Low-wealth respondents perceived that incorporating communal land into the project improved their bargaining power…* (p.246) **(+Eq)**	
Chomba et al. (2016, Kenya)	… the big losers were the smallholder farmers who wore the opportunity cost … and received very modest benefits. (p.207) **(−Fin)**		… the project often led to landowners, despite often being absentee, imposing greater control over their land… (p.210) **(−P)** … illegal squatters were peacefully removed. (p.210) **(−Vol)**
Pearse and Dehn, (2011, Indonesia)	This tension between human rights and economic efficiency is inescapable… (p.21) **(−C)** …not listening to local knowledge and wisdom… (p.13) **(−T)**	Project implementation is bringing unrest and internal conflict to the community… (p.17) **(−Tr)**	The continued lack of respect for… FPIC… and the rights of affected communities… (p.10) **(−Vol)**
Harada et al. (2015, Indonesia)		*The local NGO built confident relationships with the national park authorities... trust with (local people) was built...* (p. 15) **(+Tr)**	
Eilenberg, (2018, Indonesia)		…communicated within elite networks at district level and only sporadic information reached the community level… (p.55) REDD+ was seen… as yet another attempt by central government to take control over customary forest (p.57) **(–Inc)**	REDD+ was seen… as yet another attempt by central government to take control over customary forest (p.57) **(−P)** REDD+ initiatives were… appropriated locally based on past experiences of resource struggle, exclusion and dispossession… (p.56) **(−Vol))**

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Sanders et al. (2017, Indonesia)	… we don't want to accept it because it is too difficult… (p.75) … a lack of learning from local wisdom was a key grievance… (p. 75) **(-T)**		It seems that we are working for UNDP rather than independently… (p.76) … local actors tended to see themselves as subjects of controlled lab experiments or guinea pigs, rather than having agency of control of their options… (p.76) **(−Vol**)
Howson, (2018, Indonesia)	Some farmers do not understand money. When they get it, they spend it on silly things. They get into trouble sometimes. (p.140) **(−Fin)**	Women were included in the project yet the construction of alternative livelihoods … concreting the essentialist dichotomies of masculinity and femininity. (p.142). **(−Eq)**	…incentives from a REDD+ project… are a sort of ecological ransom… (p.143) **(−Vol**)
Enrici and Hubacek, (2018, Indonesia)	People that are typically involved in REDD have very little business experience. So… the only people who have succeeded are primarily people who have business experience. But I see people here, they get money from the clouds and they spend it, because it's not theirs. (on-line reference) **(−Fin)**		You're going around bothering people all the time… … they are so fatigued… they're like 'please go away'. (on-line reference) **(−Vol**)
Boer, (2018, Indonesia)	Spatial planning operates as an instrument of… demarcation, specifying zones where certain forest activities are permitted and others prohibited. (p. 8) Forest Management Units operate through a local statutory body that has the authority to plan and regulate all activities in the forest area… (p.8) **(−C)**		… the state has operated… for political and business elites to exploit forests for private gain. (p. 10) **(−P)**

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Muttaqin et al. (2019, Indonesia)	communities face constraints... (1) limited funds; (2) lack of skills and knowledge; (3) limited access to resources (on-line reference) **(−C)** Traditional forest management institutions need to be formally recognized, enhanced and strengthened (on-line reference) **(−T)**		
Boer, (2019, Indonesia)		...lack of inclusion of community input in the project design; and all activities were externally designed and pre-planned with no room for community members to provide feedback (p.176) **(−Eq)**	
Saeed, (2018, Ghana)	The technical nature of REDD+... removed from the understanding and involvement of local stakeholders. (p.56) **(−T)** Ghana's readiness process has not been able to establish what the risks and benefits are for each stakeholder group. (p.56) **(−Fin)**	*… the FC REDD+ unit reportedly goes… out of the way to look for those who have been left out and bring them on-board.* (p.52) **(+Inc)**	
Walbott and Rosendal, (2018, Costa Rica)	… pressure for early action… challenges the … knowledge transfer mechanisms… (p.116) **(−T)** … it is difficult for small property holders to access money on the carbon markets… (p.117) **(−Fin)**		
Guadalupe et al. (2018, Brazil)	The state of Amapa is still struggling with key aspects of REDD+ monitoring. (p.1) **(−T)**		

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West, (2015, Brazil)	*Potentially the greatest achievement ... was the successful development of a financial mechanism to secure equitable REDD + revenue allocation* (p11) **(+Fin)**	*... the community was found to be mostly engaged with the project's goals and strategies.* *It is clear that the role played by partner NGOs*	The 5% of community members who did not support the REDD + projects were mainly from one village that still profited from illegal logging. These

		was fundamental for the design and engagement of the indigenous group... (p.11)(**+Tr)**	individuals also refused to participate in the interviews... (p.11) **(−P)**
Nathan and Pasgaard, (2017, Cambodia)	We waited so long to get carbon funding, some of my members feel hopeless… and nothing happens… (p.33) … the project proved risky… due to false expectations… (p.33) (**−Fin)** *…the main actual on-the-ground activity was to involve local people in forest patrols… may have helped protect the forested areas…* (p.32) **(+C)**	… the committee and members who are active will get benefits… (p.34) **(−Eq)**	*There are many benefits from forest management. Many people can access NTFPs*… (p.34) **(+P)**
Work, (2018, Cambodia)	...not enough money though. It doesn't replace money we can make doing other things, so it's hard to get people to patrol. (p.257) **(−Fin)**		...if we keep the forest they will help us - if not, they won't. (p.257) **(-Vol)**
Samndong, (2018, DR Congo)		The relationship between political and economic actors in the DRC are...client-patron relationships… (p.9) These forestry officers supplement their low salaries through bribery and corruption. (p.9) **(−Eq)**	

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Appendix 1 cont.

Gauthier, (2018, DR Congo)	... the minimum objective of not aggravating the situation of indigenous peoples ... is not achieved. (p.10) **(−C)**		... the initiatives pursued will tend to favour the emergence of private actors, reduce the benefits of the poorest people... (p. 10) **(−P)**
Pelletier et al. (2018, DR Congo)	(Tree planting) could eventually limit land for leasing to landless people who depend on it their livelihoods. (p.112) **(−Fin)**		
Holmes et al. (2018, Panama)			I am the one weeding my garden in the hot sun... why should the carbon project renovate the community meeting house (p.235) **(−Vol**)