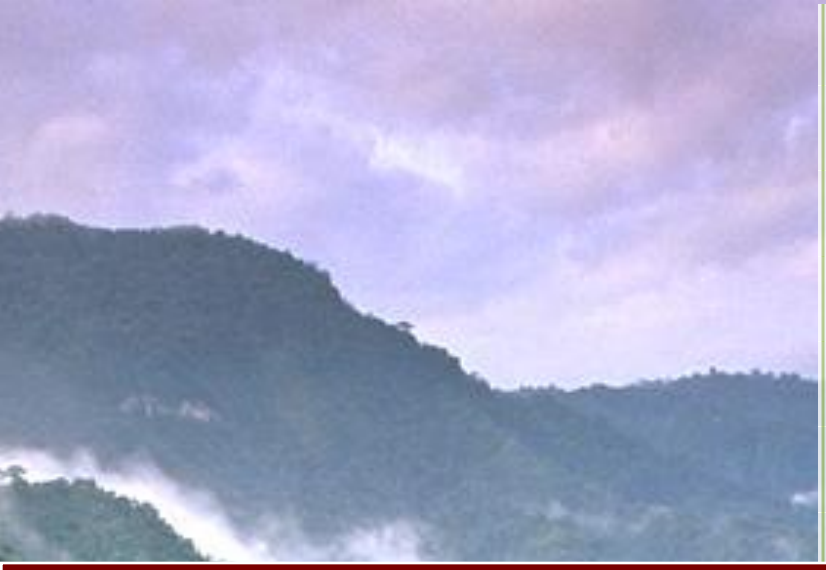

The Different Colours of REDD

Stakeholder Perspectives on Reducing Emissions from Deforestation and Forest Degradation

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So Strong and yet Vulnerable, the People, Man, the Forest, the Tree

Painting on the Berlin Wall, Eastern Gallery, Berlin

Executive Summary

Money does not grow on trees. This saying summarizes the core trade-off between economic profits and maintaining our ecosystems. Since the costs and benefits of the services our ecosystems provide globally are not internalized in our economic system, the main stakeholder spheres of market, state and civil society are inclined to deforest to make money out of the trees. A solution is needed to prevent deforestation, and the long term consequences it has on our ability to survive.

The loss of our forests is an issue of commons management. Commons are resources in which consumption reduces the amount available for other users and it is difficult to prohibit or control access of users (Van Laerhoven & Ostrom, 2007). So far the depletion of these common resources has not been halted (Ostrom, 2008). The common resource management literature indicates several important trends; more attention to external factors is required, global commons are becoming more important, stakeholder perceptions play a major role and market based incentives as well as co-management are possible solutions. Forest management is also a suitable case for analyzing the trends in this body of literature as it is a global commons that is currently seeing the introduction of co-management and market based incentive solutions. To create a complete picture, the academic fields of the drivers of deforestation, market based incentive and stakeholder theory are analyzed next to the field of common resource management.

The Objective

A promising solution for forest management is Reducing Emissions from Deforestation and Forest Degradation (REDD), which attempts to create value for standing forests by valuating the carbon trapped within forests. It is likely that REDD will combine market incentives with wider policy changes. Analyzing the literature on REDD shows the involved parties are still debating several aspects, including the source of finance, the scale, the goals, governance and the type of agreement. These debates are riddled with unclarity as well as different viewpoint and definitions. A common understanding between stakeholders is essential for reaching an agreement, therefore the main research question of this thesis is:

How do different key stakeholders perceive vital aspects of REDD?

The results offer lessons for the academic field of common resource management. This thesis also forms an objective overview of the perspectives of key stakeholders, which can facilitate their ongoing dialogue.

The Methodology

This thesis analyzes REDD as a forest management case study in the wider context of common resource management. The data is collected through document analysis, open questionnaires and semi-structured interviews. Actors from all three stakeholder spheres of market, state and civil society are included. The coded data results in an overview of the different stakeholder perspectives on the ongoing debates within REDD.

The Conclusions

A vital aspect of successful commons management is collaboration and co-management. Even in global commons, the importance of community involvement is gaining acceptance. However, community management alone is not sufficient, as governments have to back up the tenure system and prevent illegal encroaching on community territory, as well as tackle larger deforestation drivers. Both the literature and the respondents acknowledge the best chance of success is when the benefits of both national and local management are combined.

Furthermore, the understanding and values of stakeholders are vital to reaching an agreement. The way drivers of deforestation are perceived by actors influences how they view the potential solution. Under closer scrutiny it also appears that many viewpoints that seem to clash at first glance are actually quite similar. Opposition is sometimes based on unjust assumptions of how other stakeholders view the matter. The literature and respondents both indicate that dialogue results in gradual movement towards a common understanding between parties and the building of trust. However, some conflict will always remain, partly because of diverging values. One of the main reasons for resource depletion is the lack of monetary value attributed to ecosystem services. Whether it is best to adjust nature's values to our current system or to avoid this as it will keep a broken system in place, is a debate based on principles.

One of the main conclusions of this research is that the best solution for the issue of deforestation is a holistic one. Some argue that separate measures such as improved governance and clear tenure are the solution, instead of creating value for standing forests. However, the literature shows that an overarching framework of financial incentives is likely to be needed to address these separate issues at a larger scale (Gullison et al., 2007; Laurance et al., 2006). The majority of stakeholders appears to be in favour of continuing with REDD. However, the consensus is that financial incentives alone are not enough. The objectives of the REDD programme is an issue of major debate. The literature shows opposing camps of those that see equity and ecological co-benefits as a fundamental requirement, while others feel it is erroneous to prioritize co-benefits at the expense of carbon emission mitigation. Unlike the literature, which focuses on the trade-offs of linking the issues, the collected data indicates stakeholders see a holistic solution as a necessity. Forests are ecosystems with multiple values, not just carbon. The whole ecosystem has to be considered to ensure long-term solutions, not short cuts facilitating only carbon absorption. The combination might make the debates more complex, but it will lead to better solutions. Global commons are more complex to manage due to the interlinkages between commons (Ostrom et al., 1999). This research shows that stakeholders are becoming aware of the importance of these interlinkages. Ansari and colleagues (in press) identified it was necessary for all to attain a 'commons logic' before a solution was agreed upon, meaning an awareness that a resource is finite and depletion will affect all. To this logic, the realization that all commons are linked may have to be added, to prevent the commoditization of separate aspects, leading to suboptimal solutions and undervaluation of ecosystems as a whole.

Keywords: REDD, common resource management, deforestation, market incentive schemes, stakeholder perceptions

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1. Introduction

As the old saying goes, money does not grow on trees. However, money can be made out of trees. Acres of forest have been cut down and processed to facilitate the economic boom of industrializing nations. Only a third of Europe's original forest cover remains (Halkka & Lappalainen, 2001). In this current day the realization has dawned that despite the lack of currency as foliage, forests are in fact precious in ways we had not thought of before. We live in a century where global warming is a buzzword and carbon dioxide emission levels are hotly debated. Tropical deforestation causes 15% to 20% of carbon emissions (Venter& Pin Koh, 2011) and blaming fingers are being pointed. Developed countries judge those nations that see their forests slink while those countries respond that it is now their turn to reap the economic gains of their own lands. Trees disappear not only for their wood value, but make way for pastures and agricultural land to feed the increasingly hungry mouth of global demand.

1.1Tragedy of the common forests

To fully understand the consequences of deforestation, the type of issue must be analyzed. The decrease of forest cover is an issue of common goods management (Van Tulder & Meijs, 2011). In such issues, proper regulation or institutionalization is missing, as it is hard to assign responsibilities to specific parties.

The trade-off between local economic gains at the expense of the global environment is often seen as the root cause for deforestation (see fig 1), although it does not have to be for instance with sustainable forest management. The consequences of resource depletion are both negative and positive, but not distributed equally over everybody involved, one party profits at the expense of others. The consequences are not only geographically detached, but also separated over time. Profits occur immediately, while the negative environmental effects do not take place until later. Common goods are therefore often resulting in a 'tragedy of the commons', a term coined by Hardin in 1968. Individuals all want to benefit from the individual economic gains of the common resource, while they only pay a marginal amount of the costs of depletion. This is the concept of externalities. The ecological costs of cutting trees are not incorporated into the price of the products created by those that deforest (Van Tulder & Meijs, 2011). In the end this results in the loss of the resource for the entire community.

Figure 1 The trade-off

The continuance of deforestation would indeed be a tragedy. The consequences are widespread and not only limited to carbon emissions. However, climate change does play an important part. 15% of carbon emissions are caused by tropical forest loss. In the Stern Review, putting a halt to deforestation was considered as the "single largest opportunity for cost effective and immediate reductions of carbon emissions" (Holloway & Giandomenico, 2009). Despite the fact that warnings on the urgency of reducing greenhouse gasses continue (Kaufman, 2011), global summits such as the one in Copenhagen and Durban fail to reach

strong global agreements (Behringer, 2011). Global climate is affected by deforestation in three different ways. CO2 is added to the atmosphere as the stored carbon inside the trees is released. Furthermore it eliminates the opportunities of future carbon storage. Finally it also reduces evapotranspiration[1], which imbalances the water cycle, especially in the tropical areas (Bala, et al., 2007). Other global effects are the loss of species of animals and plants and the diminishing capacity of productive lands (Houghton, 1990). Local communities will also be heavily affected. Once others make use of the common resource, this goes at the expense of the rest of the community. Loss of food, shelter and other resources have to be endured by local inhabitants as soils are eroded and rainfall reduced. The capacity of the soil to hold water decreases, which also has more severe floods as a consequence (Houghton, 1990).

The hunt for short-term profits will devastate the earth's capacity to meet future need of fuel, food and suitable space for living, as local soils erode and climate change increases. Therefore the issue of deforestation is tremendously relevant for today's society.

1.2 The REDD project

Due to the type of issue, a solution for the destructive effects of deforestation is hard to find. Responsibilities are hard to attribute to specific parties. It is a problem caused by many, has to be solved by many, but nobody feels responsible for the solution (Van Tulder & Meijs, 2011).

1.2.1 The potential solution

A promising area of research to help solve common resource management issues is market-based incentives. For forest management, this type of incentive system points out the opportunity of carbon forest finance. In practice, this translates into the 'Reducing Emissions from Deforestation and Forest Degradation' project, or more commonly known as REDD, which aims to grant carbon credits for reduced emissions due to forest preservation. A level of expected emissions due to forest loss or degradation is set and any emissions lower than this amount is converted into the corresponding amount of credits. However, these are only granted after a meticulous process of measuring, reporting and verification (MRV). REDD will function as a mechanism to internalize the positive externalities trees possess and in this way, standing forests will become valuable. However, REDD is not a recognized Clean Development Mechanism (CDM). This means REDD cannot be used to generate the credits used by industrialized countries to offset their emissions as has been stipulated by the Kyoto protocol. (Venter & Pin Koh, 2011). Currently international negotiations have not yet reached agreements on several debates within REDD such as the source of funding, and it is likely it will take several years (Seymour & Angelsen, 2009). Some argue an international agreement is necessary (Brown et al., 2009), but reaching even domestic agreements on emission cuts has proven to be difficult (Phelps et al., 2011). Currently REDD is in a piloting phase, as The Bali Action Plan called for pilots to investigate the possibilities of REDD.

1.2.1.1 Definitions

When the idea of the programme was introduced in 2005, it was only Reducing Emissions through Deforestation, so RED. A second 'D' for forest degradation was later added (Cerbu et al., 2010). Another addition to the acronym is a '+', to indicate a broadening of the project to include the

[1] The total evaporation from the earth's surface to the atmosphere, which is an important part of the water cycle.

benefits of forest conservation, enhanced forest management as well as reforestation and afforestation (Venter & Pin Koh, 2011). Another acronym that can be encountered is UN-REDD. This is the collaborative programme from the United Nations to aid REDD+ projects in developing countries. It was launched in 2008 and currently has 42 partner countries of which 14 are receiving direct financial support from the United Nations for their national initiatives (United Nations, 2012).

In this paper, all these types of projects ranging from REDD, REDD+, UN-REDD and more will be indicated by the acronym REDD.

1.3 Aim and structure of this paper

This paper aims to create a complete overview of the key stakeholders involved in the REDD project and how they view the programme and through this facilitate the ongoing dialogue between stakeholders. The potential of REDD is seen by many, but a lot of issues are still debated and parties may share more common ground than they are aware of. This thesis is mainly addressed to implementers of the REDD project, critics, supporters and those interested in finding a solution for deforestation and climate change. It is placed in the larger context of forest commons management and market-based incentives. This paper attempts to bridge different fields of literature in the area of forest management, namely commons management, causes of deforestation and market-based incentives. Furthermore, the lessons learned from the REDD case can be applied to other commons management issues. These lessons particularly apply to the influence of external factors, community involvement, stakeholder perceptions and the role issue linkage can play in acceptance of a solution. Therefore this research can also contribute to the academic field of common resource management and market incentives.

The main research question posed to assess REDD is:

How do different key stakeholders perceive vital aspects of the REDD project?

This thesis starts with a literature review on common resource management. The result is an overview of what has been discovered so far and an identification of trends that require further research. External factors and the causes of deforestation have been identified to be missing from commons literature, therefore the following chapter analyses the drivers that are at the root of the problem of deforestation. Before the effectiveness of REDD can be established, knowing what causes deforestation is key. The first sub question therefore is:

What are the drivers of deforestation?

Chapter four dives deeper into the literature of a possible solution; market based incentives. The chapter starts with discussing the literature on the valuation of forests and ecosystem services, to continue with the benefits and disadvantages, as well as which key aspects can make or break a market based incentive system. Here stakeholder views are also identified as important factors, as political feasibility can make or break an incentive system.

The consequent chapter then elaborates on REDD specifically, identifying important aspects under discussion. At the moment, many details appear to be unclear and different parties show different sides of the story. Therefore this research focuses on mapping the different stakeholder understandings on these main debates.

In order to analyze the understandings of different stakeholders, chapter six will focus on stakeholder theory as well as which stakeholders are relevant for REDD particularly. Causes are linked to conflicts between stakeholder groups. As Van Tulder and Meijs (2011) state, a common-good issue involves clashes between all three spheres of society: state, market and civil society. The section will analyze each stakeholder sphere, including its interests, obligations and the resulting trade-offs and common interests. An aspect that resurfaces in multiple fields of literature is the combination of multiple issues. It can aid different parties to come to an agreement, but also risks making an agreement too complex. This relates to a mechanism called 'issue linkage', which is the combining of multiple issues in negotiation, which is used to increase collaboration amongst parties. Therefore literature on issue linkage is included in chapter six on stakeholder theory.

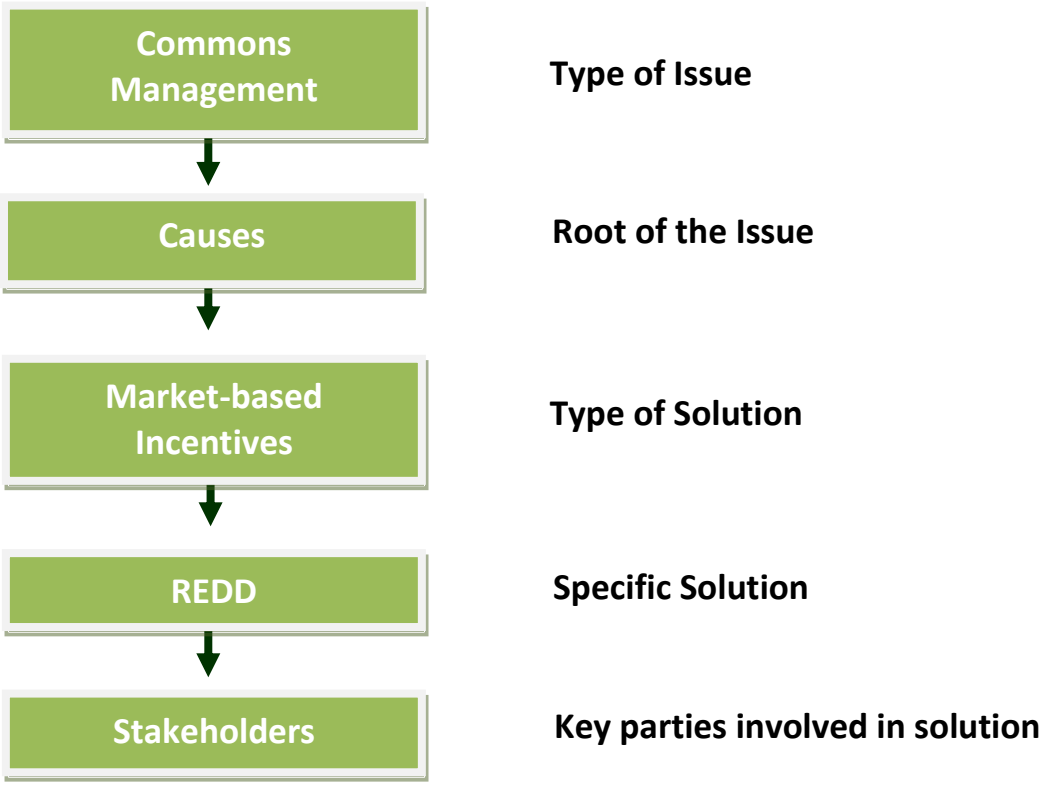

Figure 2. Progression of Literature Review

After the literature review, the next sections of the research concern the data collection. Since the understanding of the issue by different stakeholders has a major impact on the decision making, section 9.1 will deal with the sub question:

How do different stakeholders perceive the issue of deforestation and its drivers?

Another issue of the debate around the REDD project is that it appears to be riddled with a lack of overview and miscommunication. Therefore a section in this research is devoted to the perspectives of the key stakeholders on issues that are debated. This includes what they define as REDD, its main goals, funding, scale, governance and implementation, reaching an agreement and what the next steps should be.

Looking at the fundamentals of REDD, a discussion arises on what the main objective of the project is. Venter and Pin Koh note there is a real risk of overburdening REDD to try and achieve a whole set of

objectives, while losing sight of the main objective of reducing carbon emissions. They see protection of biodiversity and benefits for rural populations as side benefits, while Clement and Clement (2008) see rural benefits as vitally important for the legitimacy of the project. This issue relates to the possible combination of multiple objectives within the REDD program. This issue linkage is said to increase the acceptance of different parties. Therefore a sub question is:

What role does issue linkage play in the acceptance of REDD by different stakeholders?

However, issue linkage can also result in overcomplicating the incentive system (Wunder, 2005), so a short analysis will also be made on how issue linkage impacts the functionality of REDD.

Does issue linkage help or hinder the ability of REDD to address the causes of deforestation?

All this information leads to the ability to conclude whether or to what extent REDD tackles the causes of deforestation and the conflicts between its stakeholders. It also identifies the perceptions of different stakeholders on vital aspects of the REDD project. These different viewpoints are affected by economic interests, but also by their understanding of the issue of deforestation. This research also analyzes the mediating influence of the issue linkage mechanism on stakeholder acceptance and the ability of the REDD project to still tackle the drivers of deforestation. A graphic depiction of this research can be found in figure 3.

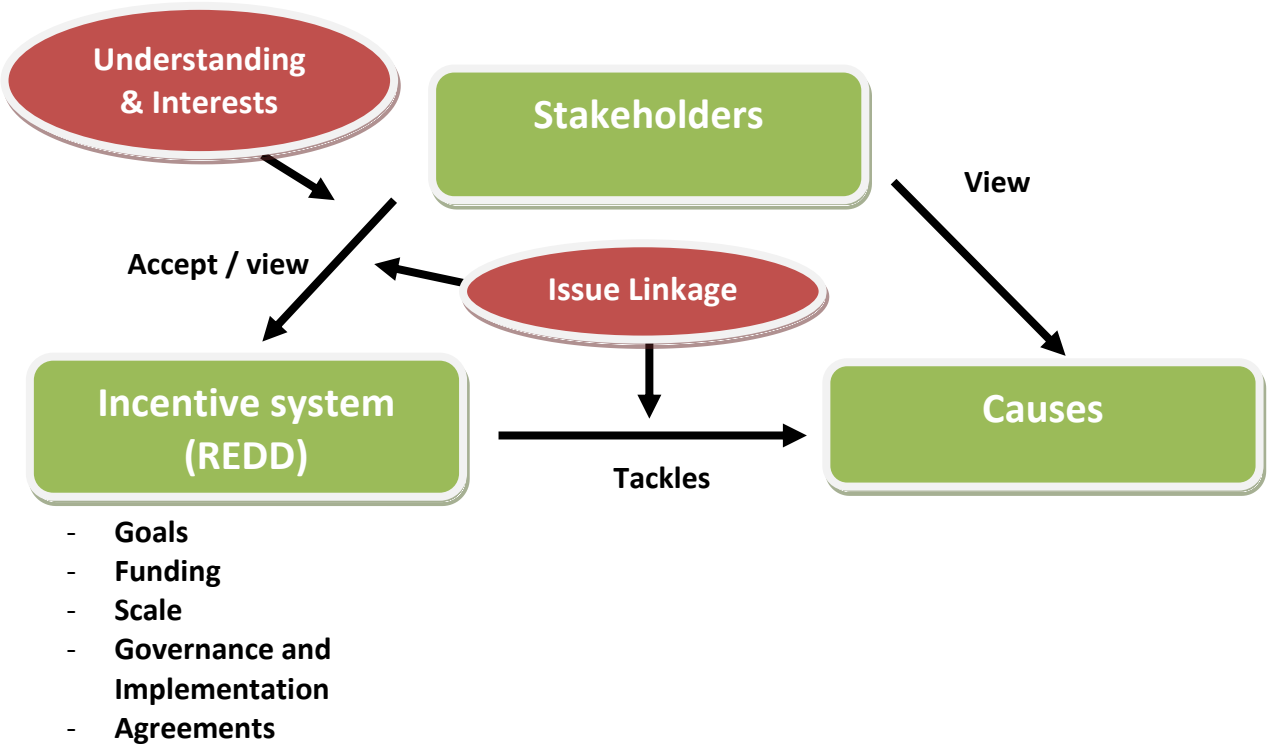

Figure 3. Model of the Research Paper

All the steps mentioned will conclude in an overall and clarified picture of what REDD is and what it can achieve according to the key parties involved. Creating this clear picture of different viewpoints is a step towards allowing REDD to prevent forest management from turning into a tragedy.

2. Managing the Commons

This chapter dives into the theory of common resource management. The purpose is to discover the current state of the field that looks into managing common resources like forests. The chapter starts with an analysis of the origin, followed by how the field has progressed. Then the chapter will zoom into trends that are identified. This is followed by a section on the literature focussed on managing forests in particular. Finally, the chapter concludes with aspects which require further research and therefore are the points of focus in this thesis.

2.1 The Origin

Hardin's 'Tragedy of the Commons' of 1968 was identified by biologists as the publication having the greatest impact in the twentieth century (Barnett and Mabry, 2001, as used by Van Laerhoven and Ostrom, 2007). Even though management of the commons has been going on for centuries, his article can be seen as the foundation of the academic field.

The main focus of Hardin's article is overpopulation, but the process he describes is applicable for all commons. Hardin explains this process leading to tragedy with the now famous example of a pasture, open to all. Each herdsman making use of the pasture is a rational being, seeking to maximize his gain. Adding an extra animal to the herd creates a gain for the herdsman, while the negative component of overgrazing is shared by the whole group. This privatization of gains and communization of costs, leads to the conclusion for the herdsman that it is profitable to add an animal to his herd. Therefore each individual herdsman will continue to add animals to his herd until the pasture has disappeared. As Hardin succinctly puts it, "freedom in the commons brings ruin to all" (Hardin, 1968, p. 1244). He proposes two options to prevent tragedy: sell of the commons as private property or government intervention by means of taxation or coercive laws.

Hardin also makes two other important points. First of all, he poses that an alternative management system need not be perfect, but simply preferable to the current one. Not changing the status quo is an action in itself, which in this case might bring total ruin. Second, he stressed that the morality of an act depends on the state of the system at that time. To use the same example, killing a bison for his tongue is only objectionable when people recognize bison as a finite species on the verge of extinction.

2.2 The Definitions

Even though Hardin has been praised for his influential article, most of the literature that followed in the field of commons management criticizes what Hardin describes as 'common property'.

2.2.1 Definition of common resources

The term 'common property' cannot be simply used when there are no institutional arrangements in place (Ciriacy-Wantrup and Bishop, 1975). Property is an income stream or a benefit, property rights are the claims on these benefits, which are protected by a higher organisation, generally the government (Bromley, 1992). The term 'common property' for the pasture described by Hardin is misleading, as it implies a form of ownership is in place (Ciriacy-Wantrup & Bishop, 1975). A substitute often used is 'common-pool resources', which Wade (1987) describes as a subset of public goods. In the rest of this paper, the term 'common resources' will be used. Blomquist and Ostrom (1985) define this as a finite flow of separable units which can be used by multiple individuals.

Consumption reduces the amount available to the rest of the group. In 1989, Berkes and his colleagues added a second key characteristic, namely the problematic exclusion or control of access of users. This definition has been used for common resources since then. The commons most often talked about are fishery, irrigation, forestry, water management and animal husbandry, while lately commons such as biodiversity, climate change and the internet have started to gain attention (Van Laerhoven & Ostrom, 2007).

2.2.2 Property regimes

A property regime is a human artefact resulting from collective opinion on what is valuable and scarce and therefore worth protecting with rights (Bromley, 1992). Common resources are managed by four basic property rights regimes (Berkes, Feeny, McCay, & Acheson, 1989).

1) Open Access - No institutional arrangements are in place
2) Private Property - Individuals or corporations have the right to regulate and exclude users
3) Communal Property - A particular community of users regulates and excludes users
4) State Property - The state governs the rights to the resource

The type of regime described in Hardin's paper is Open Access, as the resource was owned by none. In the case of private property, the rights are often enforced by the government. These rights are also generally transferable and exclusive (Feeny et al., 1990). Communal property is often right of equal use for all members of the community (Feeny et al., 1990). Some authors refer to this type of regime when talking about common property. State property does not mean nobody is allowed to enter. The government may still allow access by the general public or distribute use rights (Feeny et al., 1990). In reality, the four regimes often overlap (Berkes et al., 1989).

2.3 Which property regime is best?

2.3.1 The communal option and the unclear recipe for success

Another main point of Hardin's 'Tragedy of the commons' that was criticized, was his conclusion that privatization and government control were the only viable options to save the commons from tragedy. As Crowe (1969) puts it, the state does not have the monopoly on coercive force. Hardin assumes users cannot cooperate to reach common interests, while in reality many individuals are pressured by their communities to behave according to set rules (Berkes et al., 1989). The existence of strong social bonds and norms leading to the formation of such institutions is also referred to as social capital, which results in individuals investing in collective management, as they know others will do the same (Pretty, 2003).

There are many examples of successful community management (Ciriacy-Wantrup & Bishop, 1975; Blomquist & Ostrom, 1985; Wade, 1987; Berkes et al., 1989; Feeny et al., 1990; McCay & Jentoft, 1998; Dietz et al., 2003; Ostrom, 2008; Van Laerhoven & Ostrom, 2007; Pretty, 2003; Ostrom et al., 1999) and lab studies that show that people will collaborate together to regulate commons use (Ostrom, 1999B). The communal property regime actually has several advantages. For starters, it can be much cheaper for the government in comparison to state or private control (Wade, 1987; Ostrom, 1999B). Other advantages are the local knowledge about the resource that communities possess. Communities are also able to include only trustworthy participants. Combining all of this will result in rules that are more suitable for the specific common resource, instead of a set of general rules crafted by the state (Ostrom, 1999B).

Until recently, environmental policy often ignored the existing community based governance structures, despite their potential impact (Dietz et al., 2003). Governmental top-down decision making ignoring local community structures can lead to disaster (Ostrom, 2008). It has happened that communities were removed from the area they lived to protect the common resource. These peoples are often the poorest and indigenous people, whose livelihoods depend on these resources (Pretty, 2003). Imposing the state control as Hardin suggested, can thus do more harm than good, especially since governments often do not have the means to properly regulate the area. This results in a De Juro State property, but De Facto open-access (Berkes et al., 1989; Feeny et al., 1990; Bromley, 1992). Wade (1987) therefore argues that the role of the government should be to support local systems and provide legally enforceable rights to the communities. People have started to look beyond State and Market (Van Laerhoven & Ostrom, 2007) and in 1999, the FAO announced that over fifty countries worldwide have begun to involve the local populations to manage the commons (Agrawal, 2003).

However, communal management is not a guaranteed recipe for success (McCay and Jentoft, 1998). Major contributions to the research on communal management attempted to analyze all possible factors influencing the failure or success of common management, but this path of research is not seen as the way forward (Agrawal, 2003). The number of identified variables was too large for careful analysis, while simultaneously disregarding a lot of the external elements influencing local decision making (Agrawal, 2001 & 2003).

More and more academics started to realize that the type of property regime does not automatically lead to certain outcomes. State, communal and private management have all failed and succeeded (Ostrom, 2008; Feeny et al., 1990; Dietz et al., 2003; Van Laerhoven & Ostrom, 2007). A study of Feeny and his colleagues on all four regimes according to their ability to exclude and regulate users can be found in Appendix A.

In any regime, commons management is easier when the costs of monitoring and gathering information are low, as well as rates of change of the resource, user population, technology and social and economic conditions (Dietz et al., 2003). Furthermore, outsiders can be excluded at a decently low cost and the users support the monitoring and enforcement of the rules. However, common resources that have these characteristics are extremely rare. The challenge is to devise institutions that enable these aspects (Dietz et al., 2003 (Blomquist & Ostrom, 1985)).

According to Bromley (1992), the authority system that insures the property regime is key. This authority can make or break communal systems by acknowledging their legitimacy and is responsible for the enforcement of private property. However, this is only the case when the authority system is both de juro and de facto. For example, governments truly ensure a property and do not have it only formally written. Pretty (2003) adds that higher authorities are also in the positions to shield local groups from the pressures of the global market.

In the end, the most important thing to note is that there are no simple solutions (Ostrom, 2008). Regardless of the property regime, externally imposed quick solutions can be more harmful than useful. An important element for research on property regimes identified by Laerhoven and Ostrom (2007) is that scholars should pay more attention to the contextual variables that may influence the success of any regime. The next section focuses on these external influences.

2.3.4 External Influences

Scholars such as Agrawal (2001 & 2003) have criticized common resource research to be too narrowly focused on the influences at local level, while disregarding the external influences that have major impacts on how common resources are used. The contextual factors in table are considered important:

What	Effect on depletion	Who
Pressure from the market and globalization	Increases it by stimulating usage and causing community failure	McCay & Jentoft, 1998; Agrawal, 2003; Ciriacy-Wantrup & Bishop, 1975; Ostrom, 2008; Dietz et al., 2003)
	Decreases by enlarging likelihood of creating a cooperative management system	Vollan and Ostrom (2010)
Higher Authority Interfering with Self-governance	Increase by making it difficult for communities to enforce their own rules or accidentally destroying the local management system, the interference can be heavily influenced by market pressures	Vollan & Ostrom, 2010; Agrawal, 2003; Ostrom et al., 1999; Bromley, 1990; McCay and Jentoft, 1998; Ostrom, 2008
Demographic change	Undetermined	Agrawal, 2003; Dietz et al., 2003
Technological advancement	Undetermined, it can change cost-benefit ratios of resource depletion	Agrawal, 2003; Dietz et al., 2003; Ostrom, 2008

Table 1. Important contextual factors

2.4 Identified Trends

The World Commission on Environment and Development (WCED) published the report 'Our common future' in 1987. However, two decades later we have still failed to stop the depletion of these common resources (Ostrom, 2008). Figure 4 shows the increase in articles on the commons in the last few years. Academic research has evolved from defending the communal regime as an option, to trying to identify what the factors are that contribute to success in these regimes, to the requirements of governance systems for any property regime. A pointed out gap in commons research is the lack of focus on external influences, as discussed previously. Most research until now has been on local single communities of a single commons, while this is only one type of commons management (Van Laerhoven & Ostrom, 2007). There has also been increased attention for global commons, the importance of different stakeholder views, the rise of market based incentive systems and the option of co-management. These trends are discussed in the following paragraphs.

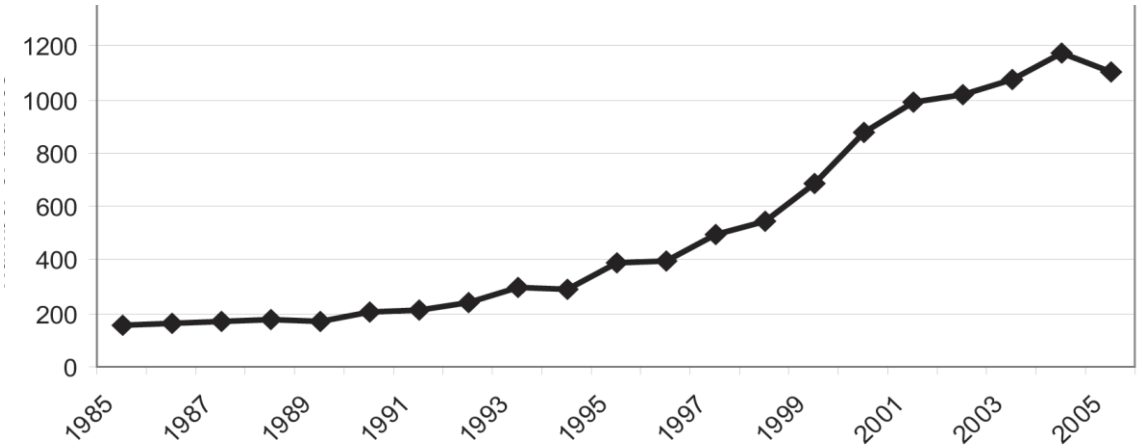

Figure 4 The estimated number of commons related articles between 1985 and 2005 (Van Laerhoven & Ostrom, 2007)

2.4.1 Going Global

Most of the research on commons has focused on local communities and local commons (Agrawal, 2001; Pretty, 2003). A challenge that has often been identified is to translate these lessons to commons on a global scale (Feeny et al., 1990; Ostrom et al., 1999; Pretty, 2003; Dietz et al., 2003; Ostrom, 2008; Ansari et al., in press). Effective governance on a global scale has proven to be more complicated (Feeny et al., 1990; Ostrom, 2008). This is partly due to the complex interlinkages between commons (Ostrom et al., 1999). People have become more complexly interrelated, but at the same time more distant from each other and our environmental problems. As Ostrom and colleagues put it, from our specific point on the globe, it is hard to comprehend the significance of global commons and how we need to collaborate in its governance. Despite the often identified urgency of global commons management, this area of research is not as well tested (Dietz et al., 2003).

Global commons concern systems that are intrinsically global such as climate change, or are closely related to global pressures. In global commons, depletion has global environmental outcomes which are not immediately felt in the local area where the depletion is caused. Ansari et al. (In press) also identify that a critical feature of a global commons is the overlapping of interests of communities, state, MNC's and NGO's due to the crossing of territorial boundaries. Transnational commons also lack one overarching authority that is able to resolve issues relating to the management of these resources (Ansari et al., in press). The regimes of private property rights, state legislation or communal management are not likely to suffice for managing the global commons (Ansari et al., in press). Global coordination is required (Ostrom et al., 1999; Ansari et al., in press). Ostrom et al. (1999) believe voluntary agreement to negotiated treaties is essential. To reach these treaties, analytic deliberation can be used (Dietz et al., 2003). Analytical deliberation is a dialogue between communities, scientists, governments and other interested parties and it can provide the information and trust that is necessary to produce mutually agreed upon management systems (Dietz et al., 2003). International and national institutions are needed to build on and complement local ones (Pretty, 2003; Ostrom et al., 1999; Dietz et al., 2003; Ostrom, 1999A), because communities do not feel able to have an impact on such global issues (Pretty, 2003). Nesting these levels of organization enable the overarching organization to deal with externalities between groups (Ostrom, 1999A).These nested institutions should be varied and combine for example community governance, with market structures, in order to increase compliance (Dietz et al., 2003).

2.4.2 Stakeholder views

The characteristics and interests of the different parties involved, as well as the resulting conflict, play an important role in the management of the common resources and warrant more attention in research (Adams et al., 2003; Dietz et al., 2003; Agrawal, 2003; Bromley, 1992; McCay & Jentoft, 1998; Van Laerhoven & Ostrom, 2007). Depletion of common resources may be caused by a mismatch between individual intentions and social goals, or due to conflicts over rights and responsibilities between competing groups (McCay & Jentoft, 1998).

How powerful groups perceive the situation has major consequences for the governance system that will be used (Agrawal, 2003). As appeared from the discussion on external influences, actions of the state can erode communal regimes and change the entire situation.

Adams and his colleagues (2003) add that conflicts between groups are often not purely based on economic interests. Different groups might also have different interpretations of the issue at hand due to different knowledge or understanding. Stakeholders are rarely aware of the ways their understanding frames their perspectives on the management of common resources (Adams et al., 2003). Policies for commons management are often made with the assumption that the problems are self-evident for all parties. Conflicts are assumed to be based on material interests and therefore can be solved by reconciling these multiple interests (Adams et al., 2003). Understanding the different understandings of the involved parties is required for dialogue, which is essential for the creation of effective institutions. However, Adams et al. (2003) also stress that it does not automatically lead to win-win results in policy negotiations, but it will ease the way towards agreement in cases of conflicting stakeholder values, interests and priorities.

Ansari, Gray and Wijen (in press) even go a step further and state that the entire concept of the commons as vulnerable resources that need preservation depends on the views of the involved stakeholders. This social construction means that commons only exist because of the collective awareness and agreement of the actors. This is in line with Hardin's (1968) comment that the morality of an act depends on the state of the system. Only when people are aware that a resource is finite and on the verge of being depleted, does the exploitation of the resource become frowned upon. Their analysis concerns one of the rare agreements on a global commons, the Kyoto Protocol. According to Ansari and his colleagues, transnational commons are only recognized as such when the main actors perceive their fates to be interconnected regarding the issue, these parties agree the issue is critical and see their actions add to the issue and finally, they collectively act to tackle the issue.

2.4.3 Market Based Incentive Systems

The solution for effective common resource management lies in restricting access and creating incentives for users to not deplete the resource (Ostrom et al., 1999). Historically the most common way to do this has been 'command and control' (Dietz et al., 2003). In this case the incentive for the users to behave to rules set by the government is avoiding punishment such as fines or jail. So far this has not proven to be an effective method, especially in cases of de juro state control, de facto open access. An alternative that is gaining in popularity is market-based incentives, as it is argued to be more effective than 'command and control' based mechanisms (Dietz et al., 2003). Market-based incentives have seen a rise of an entirely new field of research and are strong candidates for potential solutions to the issue of commons management.

2.4.3 Co-management and collaboration

In the academic field of commons management, the consensus seems to arise that the solution for effective management lies beyond property regimes in the collaboration between all the different parties involved. Especially global commons require co-management on a global scale (Feeny et al., 1990; Ostrom et al., 1999; Wijen & Ansari, 2007; Ansari et al., in press). Effective commons management requires nested levels of institutions, meaning international and national institutions that build on and complement local ones (Pretty, 2003; Ostrom et al., 1999; Dietz et al., 2003; Ostrom, 1999A). These institutions have to be varied and include different mechanisms to ensure compliance of all parties (Dietz et al., 2003). The higher authority is one of the major external influences that can make or break communal management, therefore agreement between higher and local levels is essential. Co-management between these parties combines the benefits of the effectiveness of the macro level (Laerhoven & Ostrom, 2007) with the knowledge of local needs and culture (Ostrom, 2008; Dolsak, et al., 2003). The often quoted successful case of the Maine lobsters also made use of co-management. The rules imposed by the state would not have been perceived as legitimate without the agreement of the local fishermen, while these locals had little ability to control access in times of increasing technological innovations without the state (Dolsak, et al., 2003)

Ostrom and her colleagues (1999) believe the best way to go is voluntary agreement to negotiated treaties, combined with local communities involved in monitoring and rule enforcement. Dietz et al. (2003) state that dialogue between all interested parties is needed to create mutually agreed upon management systems. Aligning stakeholder views is essential and Agrawal (2003) stresses that the interests of the powerful actors need to overlap with those of the wider society. These views are not limited to economic interests, how parties perceive the issue is also key for the dialogue (Adams et al., 2003).

The issue with global commons is the lack of one overarching authority (Ansari et al., in press), which means collective action without one leader is necessary (Lincoln et al., 1996, as used by Wijen & Ansari, 2007). This collective institutional change is the process resulting in sustained cooperation between dispersed actors in order to create or transform institutions (Wijen & Ansari, 2007). Both Wijen and Ansari (2007) and Ansari et al. (in press) studied the formation of the Kyoto Protocol and identified certain drivers and requirements for reaching the agreement. Overlapping both articles results in the conclusion that acceptance of the incentive systems and its implementation mechanisms by all parties is key. A diverse set of instruments should be created to engage different actors at different points in time (Wijen & Ansari, 2007).

Acceptance by different parties can be achieved through a variety of mechanisms (Ansari et al., in press). Active learning, for example, happens when new information causes the involved parties to redefine the assumptions they had on the issue. Another commonly used mechanism is ‘issue linkage’, which is the clustering of different issues that have a positive interdependence (Haas, 1980 as used by Ansari et al., in press). The combination of different issues results in a wider scope and therefore more possible solutions. It also leads to a larger enrolment of actors (Wijen & Ansari, 2007). Since global commons result in more interlinkages between different commons (Ostrom et al., 1999), issue linkage might prove to be an especially useful mechanism.

2.5 Managing forests

Forest management is a good case to study for the wider area of research into commons management as a lot the current trends needing further research surface in forest commons. Forests can be seen as a global commons, as deforestation is closely linked to global pressures from demand in the timber market (Dietz et al., 2003), climate negotiations on CO_2, biodiversity conservation and more. Many forests also cross national boundaries. Global commons are an area requiring further research (Dietz et al., 2003). One of the things that makes global commons complicated is the interlinkages between different commons, which is also the case for forest. About 1.6 billion people rely on forests for their water supply (Ostrom, 2008). The forest also produces multiple products, which are harvested by the local communities and can result in their economic sustenance (Agrawal, 2007). Forests are also intricately linked to climate change and biodiversity. Solutions are therefore seen as complex due to both the importance of conservation, but also of local livelihoods (Agrawal, 2007). However, one of the most undervalued benefits of the forest is that it can produce products without a lot of negative impacts on the forest (Agrawal, 2007). Conservation can therefore be combined with the issue of livelihoods of local communities.

Forests also suffer the main problem of all commons, the implementation of property regimes and the assigning of duties. The depletion of forests cannot be blamed on lack of ownership (Ostrom, 2008). Almost 82% of the world's forests are owned by the government. Private ownership accounts for 11.9 and communal for 8.3 percent (Agrawal, 2007). Problematic is that many areas that are appointed to be protected, are not due to lack of budget or staff (Ostrom, 2008). The last two decades have seen a rise in community management of forests, but instead of a pure community regime, forms of co-management have gained popularity (Agrawal, 2007). Reasons for this have been pressures on the government in the form of fiscal deficits, evidence that local actors have the capacity to govern the resources at lower costs and pressures from these communities and indigenous groups for more control over their land (Agrawal, 2007). Therefore it is a good case study to analyze the trend of collaboration and co-management.

Forests also offer the opportunity to look into the rising trend of the need to look into different stakeholder views. Users at different scales have different understandings of the worth of forests, which leads to conflicts (Dolsak, et al., 2003). Global users see forests as carbon sinks, while local users depend on the forest for their livelihood (Dolsak, et al., 2003).

A major shortcoming of the research on forest management is the lack of information transfer between research fields and practice. In commons research, the focus is on institutional factors while external influences are mostly deemed less important (Agrawal, 2007). For those scholars that research explanations behind deforestation, it is the other way around. Both fields hardly make use of each other's work (Agrawal, 2007). Reports on deforestation such as the FAO Global Forest Resources Assessment (2005) mostly ignore research on commons, property rights and institutions (Van Laerhoven & Ostrom, 2007). Agrawal therefore recommends research on the forest commons to include these other fields of literature, especially regarding the importance of market institutions in newly arising areas that look at carbon and watershed services of forests. To enable the best possible research of the forest management case study, the literature review of this thesis attempts to bridge these gaps.

2.6 Conclusion

The academic field of commons research is an important area of research. The origin in the form of Hardin's 'Tragedy of the Commons' (1968) is seen as a classic publication and a must-read. It is also the field of research that lead to the first Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel awarded to a woman, Elinor Ostrom, in 2009 (The Royal Swedish Academy of Sciences, 2009). However, decades of research have passed, but the depletion of common resources still continues.

Since Hardin's (1968) article, the field has progressed from defining four different property regimes and identifying communal management as a good candidate for resource management. However, property regime alone does not predict the outcomes of management and more focus on external factors has been identified as a need. This is no different for forests.

Other trends that warrant more attention are the increased need for commons management on a global scale and the different views of involved stakeholders. Not only the economic interests of the stakeholders are important, but also their understanding of the issue at hand. Powerful players like the state have a major impact on the resource management system that will be implemented, but these top-down decisions often lead to disaster as they destroy the communal systems in place. Collaboration and co-management have been identified as promising options for managing common resources. Co-management combines the effectiveness of the macro-level, while maintaining the benefits of local knowledge. Key aspects to reach collaborative agreements are good incentive systems with an assortment of mechanisms to ensure compliance with a large group of actors. Recently there has been a rise of market-based incentives with promising results. This thesis analyzes the case of forest management, as it offers an opportunity to analyze all these important trends.

Before the case of forest management and its solutions can be adequately analyzed, the literature review attempts to bridge the gaps in forest management and commons management literature, such as the lack of transfer between the two fields in the area of causes. Before progress can be made in analyzing solutions, the causes of the problem first have to be identified. Therefore the next chapter focuses on the drivers of deforestation.

3. The Causes of Deforestation

Key to the evaluation of REDD as an effective solution is analyzing how it addresses the causes of deforestation. Therefore this chapter will show an overview of all the drivers of forest loss. First the method used to create this compilation of causes is outlined, followed by the different causes grouped by type. Then the different viewpoints of the different areas of literature are analyzed and the chapter concludes with an overview of all the causes behind deforestation, including a section bridging these causes with the literature on commons management.

3.1 Methods

As Venter and Pin Koh (2011) point out, REDD might not tackle all the different economic, social and political factors that form the base of the problem. However, REDD will not be a failure if it cannot address all of the causes of deforestation. It would not be logical not to implement a project merely because it does not solve all the world's problems (Laurance, 2008). It could be that REDD tackles some of the sources of forest loss and another solution is needed to tackle others. An overview of the foundation of the problem is needed. To create this overview of causes, I have chosen fifteen influential articles. To ensure a complete picture, these fifteen articles come from three different academic areas: general science, social sciences, and economics and business. The journals per area have been selected based on their H-index found by the SCImago Journal Rank (SJR). All journals belong to the top quartile of their field. Another weighing factor was the number of citations as reported by Google Scholar.

3.2 Proximate and Underlying Causes

Deforestation can partly be attributed to ecological factors such as climate change or natural disasters. Nevertheless, the largest change is the result of human activity (Allen & Barnes, 1985). Deforestation by human activity occurs because agricultural companies or households decide to cut down trees. The influential article of Geist and Lambin (2002) splits up the drivers of deforestation into two categories: proximate and underlying causes. Whereas proximate causes are the human activities at the local level, underlying driving forces are the social processes that lie at the core of them (Geist & Lambin, 2002). However, there is feedback between the two drivers as the decisions of individuals and companies also influence for example market prices (Angelsen & Kaimowitz, 1999).

3.3 Proximate Causes

According to Geist and Lambin (2002), the proximate causes are infrastructure, agricultural expansion and wood extraction. Wright (2005) and Rudel (2009) add fragmentation of the forest resulting in what is called a 'Patchwork Forest'. It is rarely the case that a single variable leads to deforestation, at the proximate level forest loss is best explained by a multiple of these factors (Geist & Lambin, 2002). An overview of the proximate causes can be found in table 2.

Driver	Effect of driver on deforestation
Infrastructure	Increase
Agricultural Expansion	Increase
Wood Extraction	Increase
Patchwork Forest	Undetermined

Table 2 Overview of Proximate Causes

3.3.1 Infrastructure

Many articles quote the construction of infrastructure as a driver (DeFries et al., 2010; Geist & Lambin, 2002; Butler & Laurance, 2008; Allen & Barnes, 1985; Carr, 2009; Angelsen & Kaimowitz, 1999). Roads reduce the resistance of distance (Carr, 2009) and once impenetrable forest is now reachable, which draws the agricultural population in search of new land to the forest frontier (Allen & Barnes, 1985). Angelsen & Kaimowitz (1999) found that accessibility was one of the most significant variables in their statistical analysis, but they also warn that a simple correlation between road construction and deforestation might overstate causality. In some cases causation might be reversed as roads are built because the area has already been cleared for settlers.

3.3.2 Agricultural Expansion & Land Use

The desire to turn forestland into pastures and crops is one of the main causes cited in the literature (Cropper & Griffiths, 1994). It is a driver in 96% of the cases investigated by Geist and Lambin (2002). This driver consists roughly equally of conversion for cattle ranching, shifting cultivation, colonization agriculture and permanent cropping. It is a short-term cause as the effects are immediate (Allen & Barnes, 1985) and according to Rudel (2009), it is also inevitable as it delivers instant profits to the agents. It is also argued that the way the land is used has a larger impact than merely clearing the trees. Soil erosion, annual burning and the grazing of animals all reduce the natural ability of the forest to regenerate (Allen & Barnes, 1985).

3.3.3 Wood Extraction

The extraction of wood for logs and fuel is also an often cited cause in the literature (Cropper & Griffiths, 1994; Geist & Lambin, 2002; Allen & Barnes, 1985; Wright, 2005; Carr, 2009). The degree of impact differs per country, but in the continent of Asia, logging companies have a major influence (Carr, 2009). Allen and Barnes (1985) see wood extraction as a long term cause, as it will only result in deforestation if it happens on such a scale that it affects the capacity of the forest to regenerate. No distinction is made between illegal logging, logging for sustenance and industrial logging.

3.3.4 Patchwork Forest

The opinions on the effect of a patchwork landscape are divided. According to Wright (2005), the effect is similar to that of the construction of roads. A fragmented forest leads to loggers and colonists being able to reach remote areas. Rudel (2009) on the other hand sees the scattered unexploited forest as more expensive to harvest for large-scale companies.

3.4 Underlying Causes

Often two to three proximate causes are driven by three to four underlying causes (Geist & Lambin, 2002). In this thesis they are split according to the relevant parts of the PESTEL framework, which is often used for analysis at the macro level. The P stands for Political, the E stands for Economic, the S for Social, T for Technology and finally L for Legal. The E for Environmental influences is left out, since human activity is the main driver behind deforestation. Each area has an impact on the global and local level. An overview of all underlying causes can be found in table 3.

Area	Driver	Effect of increased driver on deforestation
Social	Population Growth	Increase, but only through affecting other variables
	Rural Population	Previously an increase in rural population had a tremendous effect, but now a decrease might still increase deforestation
	Urban Population	Increase
	Culture Change	Environmental counter movements should halt deforestation
Economy	Agricultural Markets	Increase
	Poverty	The landless poor are the most likely to deforest
	Off-farm Employment	In general decrease
	Economic Kuznets Curve	Economic growth will not save the forest
Technology	Agricultural Productivity	Undetermined
Political	Policies and Institutions	Plays a major role in the rate of deforestation
	Democracy	Decrease
Legal	Property Rights	Ownership insecurity increases deforestation

Table 3 Overview of Underlying Causes

3.4.1 Social

3.4.1.1 Population Growth

Population growth in itself is frequently stated as an important underlying driver as it would increase the need of agricultural land as pressures increase for fuel, food and shelter (Cropper & Griffiths, 1994; Allen & Barnes, 1985; Butler & Laurance, 2008). Other scholars believe this factor has been given too much attention (Geist & Lambin, 2002; Angelsen & Kaimowitz, 1999). In only 8% of the case studies did population affect the deforestation rate, and always in combination with other causes (Geist & Lambin, 2002).

3.4.1.2 Rural & Urban populations

Distinguishing between rural and urban population growth results in better analysis (DeFries et al, 2010). Rural population density boosts forest clearing while rural to urban migration offsets this pressure (Cropper & Griffiths, 1994; Ehrhardt-Martinez et al., 2002; Rudel, 2002; Rudel, 2009). An urbanized society has more efficient economies and therefore a reduced rate of natural resources. It also pulls investment from rural areas towards urban enterprises and reduces the amount of labour in extractive industries. However, urban agglomeration increases the use of fossil fuels and electricity and therefore increases other environmental externalities (Ehrhardt-Martinez et al., 2002). On the other hand, there are scholars that argue that the large effect of rural population was only important until 1990 (DeFries et al., 2010; Butler & Laurance, 2008). Rural to urban migration no longer reduces the pressure as the urban population consumes more animal products and processed foods than rural inhabitants, which stimulates the commercial production of cattle and crops (DeFries et al., 2010). Carr (2009) however, does not agree that urban population pressure has taken over from rural population pressure. A rural farmer will settle at unoccupied forest frontiers where land is available. Rural to urban migration reduces the population density in rural areas, which allows extensive agricultural practices and attracts frontier farmers who are major agents of deforestation. Deforestation in rural areas has accelerated despite the decline in rural population and therefore forest clearing per farmer has become larger (Carr, 2009). Rural to urban migration might therefore have a double negative effect. It increases urban population, who consume more (DeFries et al., 2010), but also reduces population density in rural areas which attracts frontier farmers (Carr, 2009).

3.4.1.3 Culture Change

The Social aspect in the PESTEL model also includes cultural factors (Geist & Lambin, 2002). Changes in attitudes impact the willingness to deforest. Ecological Modernization Theory states that continuing resource depletion eventually leads to an environmental countermovement (Mol and Sonnenfeld, 2000 as quoted by Rudel, 2009). Studying deforestation over time, Rudel (2009) confirms this pattern. Counter coalitions are formed by NGO's and indigenous peoples in order to create protective reserves. Governments then lower their support for initiatives leading to deforestation and the pace of forest conversion reduces in some areas.

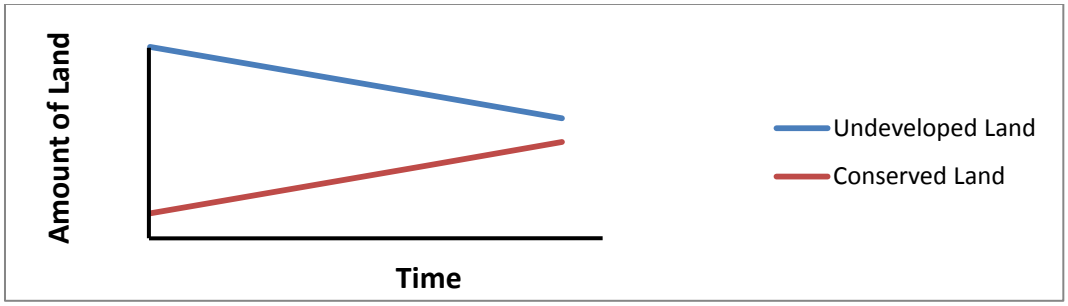

Figure 5 Relation deforested and conserved land (Rudel, 2009)

3.4.2 Economy

Economic variables play an important role in deforestation (Geist & Lambin, 2002). The effect of general economic growth on deforestation is debated. No proof was found that growth per capita GNP reduces deforestation (Allen & Barnes, 1985). However, there are other economic factors that influence forest loss. Therefore this section is further split up into the effects of agricultural markets and their globalization, the effect of poverty and employment opportunities and finally the possibility of a curvilinear relationship between economic growth and deforestation, also known as the Kuznets curve.

3.4.2.1 Agricultural markets

International demand for agricultural markets is often cited to drive forest loss (Geist & Lambin, 2002; (White, 2011; Allen & Barnes, 1985) especially when it is competing with other products such as bio fuels (DeFries, Rudel, & Uriarte, 2010). The prices in these markets impact the pace of forest loss, as for example higher timber prices show a weak, but consistently positive relation with deforestation rates (Angelsen & Kaimowitz, 1999). Butler and Laurance (2008) believe that, instead of rural farmers, major industries are now the major cause together with economic globalization. Global markets and a commodity boom attract the private sector, which deforests in a larger scale than rural farmers. Trade between nations offers the opportunity of larger profits than local trade, resulting in investments in infrastructure that local farmers would not be able to make (Rudel, 2002). The impact of the agricultural markets also manifests itself in the fact that moving away from the agricultural sector towards a more service-dominated economy is given as large driver of reduced deforestation (Ehrhardt-Martinez et al., 2002).

3.4.2.2 Poverty and employment opportunities

One of the proposed causes of deforestation is poverty (Angelsen & Kaimowitz, 1999). There is little evidence supporting this relationship, rich people could even be in a better position to deforest due to the ability to invest in the clearing of the land (Angelsen & Kaimowitz, 1999). Geist and Lambin

(2002) however, find that in 42% of their cases, deforestation is partly caused by the marginalization of famers who lost their property. Carr (2009) shows that the degree of difference between average income significantly determines the deforestation rate. Rural families with no land are more likely to migrate to frontier areas where they can more easily increase their income through agriculture. Those most vulnerable for frontier migration are the poorest of the poor, who have the lowest education, the largest families and are the most marginalized.

Forest areas are riddled with poverty and the people are in need of economic growth and employment (White, 2011). In fact, more off-farm employment and higher wages are amongst the most significant variables influencing deforestation, resulting in a reduction of forest loss. (Angelsen & Kaimowitz, 1999). Higher wages make agricultural activities more expensive and off-farm employment, outside of the agricultural sector, competes with the farming business as a way to make money, lowering deforestation (Angelsen & Kaimowitz, 1999; Carr, 2009). Rudel (2009) however disagrees. Only when the land can no longer provide a livelihood to a family, not merely off-farm opportunities, stimulates people to leave their farm.

3.4.2.3 The Economic Kuznets Curve

The literature mentions a curvilinear relationship between economic growth and deforestation. The so called Economic Kuznets Curve or EKC states environmental quality worsens until some tipping point, after which it improves (Cropper & Griffiths, 1994). This EKC would therefore show a self-correcting process in the level of deforestation countries face and even result in reforestation due to for example productivity improvements and shifts in consumption (Ehrhardt-Martinez et al., 2002). However, the income that would tip the scale is different in many studies and population pressures also have an impact. Despite higher income levels, countries can still have a higher rate of forest loss (Cropper & Griffiths, 1994). The EKC is based on the assumption that income is normally distributed, while median income is actually far below mean income (Stern et al., 1996). With this information, most estimates of the tipping point are above the income level of developing countries (Stern et al., 1996; Angelsen & Kaimowitz, 1999). Stern et al. (1996) predict that even if economic growth has this self-correcting mechanism, deforestation is likely to continue until roughly 2016. Even if the EKC holds in real life, stimulating economic growth is by no means an answer to the problem. Economic growth might be linked to improved environmental quality, but there is nothing automatic about it (Shafik and Bandyopadhyay as used by Stern et al., 1996). Policies for sustainable land use are needed with explicit incentives (Stern et al., 1996). Many losses associated with deforestation such as loss of biodiversity and climate change might also be irrevocable (Ehrhardt-Martinez et al., 2002). Therefore the EKC might be nothing more than a descriptive statistic (Stern et al., 1996).

3.4.3 Technology

This category mostly looks at technology increasing agricultural productivity. Clearing of forest will be higher in countries where productivity is low, or when land productivity declines after forest clearance, leading to shifting cultivation (Allen & Barnes, 1985). This productivity is affected by the commercialization and mechanization of agriculture (Ehrhardt-Martinez et al., 2002). Technological progress has different effects on local and global levels. The introduction of labour intensive new technologies on frontier farms and companies may increase the pressure on the forest. However, there is little evidence to support this. Technological progress in agricultural productivity on a global scale might also reduce prices of agricultural goods and increase wages, except for when the technology reduces the amount of labour needed (Angelsen & Kaimowitz, 1999). Although the

technology might be there, the prizes of using this technology influence the actual use of it. Angelsen and Kaimowitz (1999) state that a rising price of fertilizer might cause farmers to convert to using agricultural systems that use more land instead of increasing their productivity (Angelsen & Kaimowitz, Rethinking the Causes of Deforestation: Lessons from Economic Models, 1999). This finding unfortunately does not take into an account that on the short term using more land would lead to more deforestation, but on the long term this would be compensated by the soil not being damaged by the chemicals of the fertilizers.

3.4.4 Political

3.4.4.1 Government Policies and Institutions

Studies by the Rights and Resources Initiative result in the conclusion that not local people, but governments are the main driver behind forest loss, while they have ownership of roughly 70% of tropical forests (White, 2011). A major driver of frontier migration has been governmental policies stimulating rural development through tax incentives, roads, subsidizing agricultural industries and more (DeFries, Rudel, & Uriarte, 2010; Geist & Lambin, 2002; Butler & Laurance, 2008; Allen & Barnes, 1985; Rudel, 2009; Carr, 2009). In addition, governments put institutional policies in place supporting modernization of the agricultural sector, pushing small-scale farmers from their lands, leading to landless migrants likely to deforest in frontiers (Carr, 2009).

The role of the government in most cases forms a cyclical pattern. First governments stimulated settlement, but then this settlement process was handed over to coalitions of corporations, regional and local politicians, landowners and bankers. These coalitions become institutionalized in local governments. The interests of the people in these coalitions heavily influence the rate of deforestation (Rudel, 2009). A good practical example of this is the immense increase of deforestation occurring in the state of Mato Grosso, when its governor Blairo Maggi was also the owner of one of the largest soy companies in the world. Once the profits that can be made off the land become smaller, the influential members of the coalition move on and in their wake a countermovement has the opportunity to rise (Rudel, 2009).

Even when forest management practices are known, their effect largely depends on the institutions that have to carry it out, which are often lacking support, if they even exist (Word Bank, 1978 as used by Allen & Barnes, 1985). The local population might also resist due to bad quality policies or when they have different priorities (Allen & Barnes, 1985). Corruption is another important factor, as policies have not worked before due to money ending up in pockets (Butler & Laurance, 2008; Serban Scrieciu, 2007).

3.4.4.2 Democracy

Some scholars also argue that the type of government matters. A democracy would make a state more active in environmental protection due to electoral competition, press freedom and freedom of speech. These factors lead to more activism, a larger responsiveness to this activism and more widespread knowledge about environmental issues (Ehrhardt-Martinez et al., 2002). Alternatively, political instability and authoritarian regimes increase the risk for investments in forest conservation, leading to more deforestation (Serban Scrieciu, 2007). Political instability also plays a key role in ownership risk, a factor discussed in the next section (Bohn & Deacon, 2000).

3.4.5 Legal

Linked to governmental policy is the legal issue of property rights, including aspects such as insecure ownership and land titles. Empirical evidence is weak, but tenure insecurity is said to boost deforestation (Angelsen & Kaimowitz, 1999). When property rights are not enforced, opportunity costs of cutting trees are low and there are no incentives to use the land efficiently (Cropper & Griffiths, 1994). In the case of insecure property rights, forest clearing is a way to claim property of the land. Tenure security could in theory also lead to more forest loss as investments are safer which could lead to clearing, but cases in Latin America show deforestation is lower in areas with more secure tenure (Angelsen & Kaimowitz, 1999). The research of Bohn and Deacon (2000) confirms the positive relationship between high ownership risk and a higher rate of deforestation. The forest is a resource that can be cut down easily with only labour and no other intensive investments.

3.5 Total overview

This final section will first look at the differences between the three areas the literature was derived from: general science, social science and economics and business. Then an overview of the causes cited in the literature and their effect on the rate of deforestation will be given. Finally a section will focus on the overlap, or lack thereof, between these drivers and those identified by the literate on commons management.

3.5.1 A view from all angles

There are some differences in the viewpoint taken from the three different areas of general science, social science and economics and business. The articles from the area of social sciences were hard to select, as many focus on specific cases. The selected articles delve deeper in to the human motives behind decisions than those from the area of science or business. As Rudel (2009) puts it, people are often left out in research into deforestation. None of authors in the area of social sciences mention insecure property rights for the rural population to be a cause. These authors were also the majority in naming increased agricultural productivity as a possibility to reduce deforestation.

The general science literature is the only area in which increased urban population is named as a variable that would increase forest loss. Another commonly quoted driver is the globalization of agricultural markets. These scholars all appear to believe that instead of rural families, major industries are now the main agents of deforestation, even though the articles of social and general sciences were written during the same period of time. The possibility that economic growth would reduce degradation through the EKC is also not mentioned once.

The business and economics literature focuses mainly on economic macro variables and property rights. Their main methodology is analyzing and creating statistical models. Another interesting aspect is that most of the influential articles of this area were written in the 1990's. They all conclude that the EKC is not the way to reduce deforestation. Interestingly, none of the articles in this area mention the importance of governmental policies. Only one article mentions that corruption in institutions has a negative effect. Some articles do state that democracy and more freedom has a positive influence. Social factors such as rural population and culture change are also almost completely ignored. Neither do they look at poverty as a driver of deforestation or talk much about globalized markets being the issue, even in the articles published in the 21st century. More than half

of the articles do mention that insecure property rights are detrimental for forest clearing, making up the majority of articles that mention it.

To summarize, the social sciences are mostly focused on rural population and their motives, while the general sciences blame urbanization and globalization. The business and economics literature on the other hand ignores social factors and the influence of the government, while critically examining economic factors and favouring secure ownership rights.

3.5.2 The overview

An overview of all causes being discussed is given in figure 7. Caution is warranted with these generalizations as deforestation might depend more on local factors (Serban Scrieciu, 2007). Generalizations are hard to make as many studies focus on specific cases, data of doubtful validity (Allen & Barnes, 1985) or provide hardly significant results while overlooking context-specific drivers (Serban Scrieciu, 2007). Deforestation cannot be put in a simple macro level model (Serban Scrieciu, 2007).

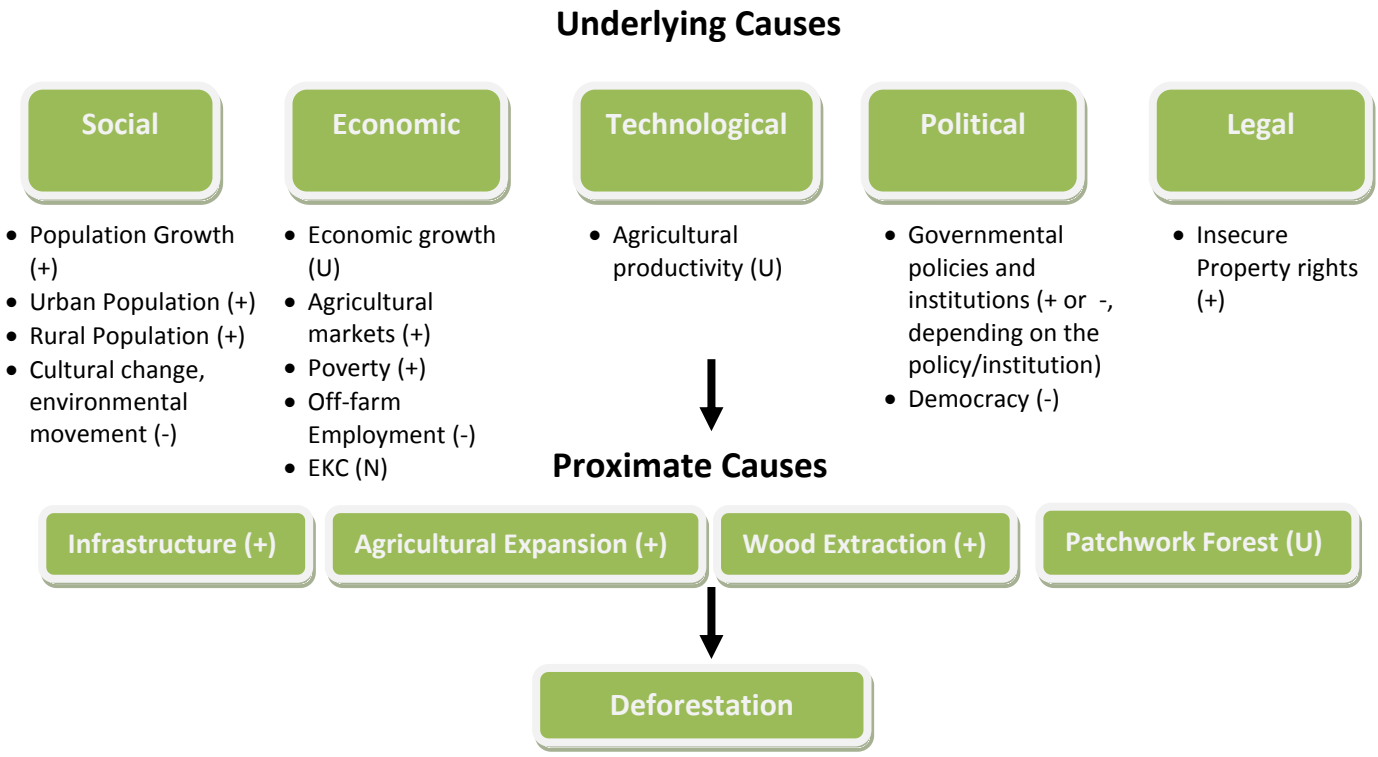

Figure 6 Overview of all the causes, signs indicate the relationship towards the rate of deforestation[2]

Based on the gathered literature, three out of four proximate causes increase the rate of deforestation while the effect of a patchwork forest is debated. Infrastructure, agriculture and wood extraction are the reasons of forest loss; however, they are only manifestations of underlying drivers.

[2] + positive
- Negative
U undetermined
N Not significant

In the social category, population growth in itself is cited as a driver, but it is not very significant and also a difficult factor to tackle. Splitting up thus category in urban and rural population actually results in the conclusion that both increase deforestation. Urban citizens consume at steeper rates and decreasing rural population density spurs deforestation. Stimulating rural to urban migration is therefore not a solution, but whether motivating people to move back to the frontier areas will reduce deforestation is not suggested. Such government stimulated rural migration was a main cause of deforestation in the past. Therefore the only driver that is worth tackling with certainty is culture change. Environmental counter movements have been linked to reduce the willingness to deforest.

Economic growth in itself does not have a clear effect on deforestation. The notion of the Economic Kuznets Curve, economic growth results in reduced environmental degradation after a certain point, has been rejected as useful. Important aspects in the economic area are poverty and off-farm employment. The two are tightly linked and poverty increases while off-farm employment decreases deforestation. Actors will therefore do well by influencing off-farm employment and poverty as well as the agricultural markets. Especially major agricultural industries have a large effect on forest loss and moving towards the service sector reduces the pressure on the common resource.

The influence of increased productivity is unclear, but government policies, institutions and a democratic state play a major role. The government therefore has an important part to play in the solution. The legal issue of insecure property rights also drives forest loss. Mitigating ownership risk is therefore a vital issue to tackle.

3.5.3 Bridging the gap

One of the major shortcomings identified in forest commons management research is the lack of bridging commons literature and literature on deforestation (Agrawal, 2007). Bridging this by comparing the research on the drivers of deforestation shows both an overlap and a gap. Both bodies of literature identify pressure from market, globalization, and the influence of a higher authority. Both also identify demographic change and technological advancement; albeit in different levels of detail, but both agree the effects of these drivers are unclear or not strong.

What the body of commons literature is still lacking, is the attention for increasing demand, the migration patterns of populations, cultural change, and the effects on communities deforesting due to poverty and lack of employment opportunities. It does identify governments as having a major influence, but only in its role as backing the property regime, while perverse subsidies are left out of the picture.

The literature analyzing drivers of deforestation does mention insecure property rights, but it could learn a lot from the nuances of commons theory. It only identifies security of property rights as a factor, disregarding what type of property regime it is or who secures it. Furthermore, it also does not research the mitigating influence of communities and their social capital on forest loss.

The next chapter deals with literature on why agricultural practices that depredate forests are often favoured over, for example conservation. It also elaborates on market-based incentives, which have been identified as an increasingly popular mechanism.

4. Market Based Incentive systems

This chapter analyzes the body of literature on valuation of forests and ecosystem services, as well as market-based incentives. The latter is done with a focus on tradable environmental allowances (TEA) and payments for environmental services (PES). These incentive systems are becoming increasingly popular and might offer the solutions to stop common resource depletion. First the definitions of the terms are explained and the main positive and negative points are outlined. A discussion of the main aspects that can make or break a market-based incentive system follows. The possibility of combining multiple objectives in one system and the influence of the wider context are discussed. The chapter ends with a conclusion on the potential of market based incentive mechanisms.

4.1 The mismatch between value and price

In economics, a service or a good has value if it increases human well-being (Bockstael et al., 2000). This value is not necessarily based on money (Krieger, 2001). However, many ecological functions have no markets and thus no price, which generates the illusion that these services have no value (Pearce, 2001b). The benefits of ecosystem services are therefore not included in calculations. Resource use profits only a small group while the costs of depletion are suffered by a larger dispersed group and future generations (Krieger, 2001), meaning the externalization of these costs often results in a misalignment of public and private return (Jack et al., 2007). A cost-benefit analysis will favour resources extraction over conservation as benefits of conservation seem low, while the costs of degradation are few (Emerton, 2003). In fact, the picture becomes even more skewed towards resource depletion if you take into account one of the most prominent drivers of deforestation: governmental subsidies (Pearce, 2001a).

Some people argue that estimating monetary values for environmental services should not be done, as ecosystems have the right to exist regardless of their value to us (Pearce, 2001b). However, the opposition argues that failure to place a value on these services will result in the exploitation of our ecosystems (Krieger, 2001). To date, efforts for conservation have not been very encouraging (Pearce, 2001b). Nobody is suggesting that economic values are all that matters, valuation is but one component of evaluating policy (Bockstael et al., 2000). Establishing values for ecosystems, however, is no easy task (Emerton, 2003) as the interconnections in ecosystems are difficult to understand (Bockstael et al., 2000. Environmental services are different from commodities as they can often not be divided into discrete units. Creating incomplete sets of disconnected values for different services of one ecosystem can lead to severe underestimations of the ecosystem (Bockstael et al., 2000). However, the difficulty of valuation does not mean we should abandon the efforts of valuating environmental services we do understand, as it is often sufficient to answer the policy decisions associated with ecosystems (Bockstael et al., 2000). It is better to internalize an underestimated value of an ecosystem into decision making than no value at all.

The value of forests comes from direct use, indirect use, option and non-use or existence values. Direct use values come from consumptive and non-consumptive uses like timber and tourism. Indirect use values come from services such as watersheds and carbon storage. Option values show a willingness to pay to conserve the option to make use of the forest in the future. Non-use value, also named existence value, comes from a willingness to pay which is unrelated to current or planned use of the forest (Emerton, 2003; Pearce , 2001b). An overview can be found in figure 7.

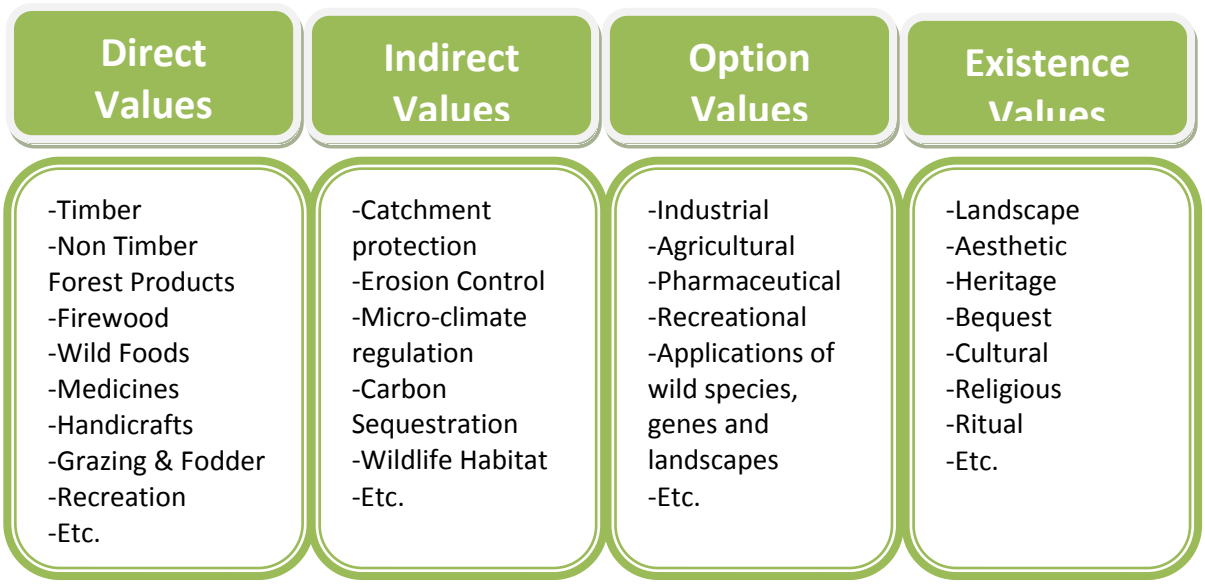

Figure 7 The value of a forest (Source: Emerton, 2003).

In 1997, Contanza et al. estimated forest ecosystem services had an annual value of 4.7 trillion (Krieger, 2001). The largest values are obtained by timber and carbon storage, which are in immediate conflict (Pearce; 2001a). Valuating carbon storage will be key to build an economic case for forest conservation (Pearce, 2001b). However, valuating is not enough. There is little evidence that better understanding of forest values lead to an increase in conservation (Emerton, 2003). If there is no carbon market, forest stored carbon will still have a price of zero in a cost-benefit analysis (Pearce, 2001a). The economic trade-offs that decision makers face have to be altered and the environmental services of a forest internalized (Emerton, 2003; Pearce, 2001b).

Some markets have started to form, but they have mostly split up the total package of ecosystem services into smaller ones such as carbon storage and watershed services. Some other services such as biodiversity are harder to valuate, and therefore also harder to create a market for. The four areas that have seen the most introductions of market-based incentives are carbon sequestration, watershed protection, landscape beauty and biodiversity protection (Wunder, 2005). According to Pearce (2001b), the process of valuation and creating markets for ecosystem services will be a 'bottom up' approach through means of mutually beneficial trades.

The rest of the chapter deals with two market-based incentive systems that attempt to internalize the values of ecosystems into the decision making process.

4.2 Tradable Environmental Allowances & Payments for Environmental Services

Command and control has long been the dominant form of common resource management, but market based incentives provide an alternative that is gaining acceptance (Chomitz et al., 2006; Stavins, 1998; Tietenberg, 2003; Zbinden & Lee, 2004; Engel et al., 2008; Gómez-Baggethun et al., 2010; Tietenberg & Johnstone, 2004; Wunder, 2005; Jack et al., 2007). Command and control approaches attempt to manage commons by externally imposing rules through regulations and punishment (Dietz et al., 2003). They have high transaction costs and monitoring and enforcement issues, especially in cases of weak governance. Command and control regulations are also inflexible and can cause unfairly distributed consequences, as the poor communities that depend on the

resource for their livelihoods are restricted (Engel et al., 2008; Pearce, 2001a). Due to these reasons, OECD member countries started looking into more flexible systems based on the market, as it is believed that these incentive systems can be more cost efficient (Tietenberg & Johnstone, 2004). Initiating markets and payments, introduces financial returns on environmental services that were previously provided for free (Engel et al., 2008). Therefore the introduction of market-based incentives has lead to internalizing these previously external costs (Jack et al., 2007, Engel et al, 2008).

Incentive based systems include a wide range of mechanisms such as taxes, subsidies, tradable permits and market friction reduction through, for example, information programs (Jack et al., 2007). Within this range, markets for ecosystems in the form of tradable permits and payments for ecosystem services schemes are often named as promising solutions (Gómez-Baggethun et al., 2010). Therefore this review focuses mainly on PES, TEAs and the overlap between the two.

4.2.1 Definitions

4.2.1.1 Tradable Environmental Allowances (TEA)

TEAs form a Market for Ecosystem Services (MES) (Gómez-Baggethun et al., 2010), in which a limit of emissions or resource use is set and allowances can be traded (Dietz et al., 2003). TEAs come in two shapes: 'Cap and Trade' and 'Baseline and Credit' (Tietenberg & Johnstone, 2004; Tietenberg, 2003). Cap and Trade systems have a maximum ceiling of resource use and use rights are allocated amongst users. The assigned cap per user in addition to any permits sold or bought is compared with the actual usage or emissions (Tietenberg, 2003). Baseline and credit schemes have a set minimum of performance and credits can be earned by reductions beyond the baseline (Tietenberg, 2003). The traded permits can be 'positive', for example natural resources, or 'negative', for example greenhouse gas emissions (Tietenberg & Johnstone, 2004).

4.2.1.2 Payments for Environmental Services (PES)

Environmental services are defined by the FAO as the processes and conditions through which natural ecosystems, including its species, fulfil and sustain human life (Redford & Adams, 2009). The basic idea of PES is that those that benefit from the services pay those that provide it (Wunder, 2005; Gómez-Baggethun et al., 2010). Compensation can tip over the scale in the decision making of users, for instance by motivating someone to switch from cattle farming to conservation. A crucial factor of PES is that the system works with the users of the land to change the way they use the resource, instead of eliminating them as is the case with land acquisition for conservation purposes (Wunder, 2005). Wunder's definition is most commonly used in the literature and it poses that a PES is:

1) A voluntary transaction
2) in which a well-defined Environmental Service, or a land-use likely to secure that service
3) is 'purchased' by at least one buyer
4) from at least one provider
5) if and only if the Environmental service secures provision.

This last point is knows as conditionality, which is the key aspect that makes PES different from previous conservation tools. Only if the service is actually provided, does the provider earn a return (Wunder, 2005). The first point implies the provider has a choice in what to do with his or her land. The second aspect includes the insecurity of measuring the actual Environmental Service. The third point illustrates that the payments come for service users, and not donors.

Wunder (2005) identifies different kinds of PES Schemes. Depending on how the service is provided, a scheme can be Area or Product Based, meaning either a cap on resource/land use or paying a green premium for a product. Public vs. Private relates to who is buying the service. Either the government buys and charges all users through taxes, or users pay directly. Public PES schemes are usually larger in scope, can prevent free-riding and have the legitimacy of the state, while private schemes are more flexible and more efficient, an example of a private scheme can be found in box 1. The final dichotomy, asset building or use restricting, relates to what has to be done before the service is considered to be provided. Use restriction is simply conservation by not doing any harmful activities while asset building schemes require restoration of the resource.

Box 1: Watershed protection in Ecuador

Since 2000, a private PES scheme has been set up by the municipality of Pimpampiro, an NGO, a donor and a trust fund. Water users pay a 25% surcharge on water, to ensure the 13.000 inhabitants are ensured of drinkingwater from the watershed. The water source was threatened by deforestation and degradation, and the money is now used to pay low compensations to nineteen upstream landowners for conserving natural forest and grasslands. In 2002, the participating households said they were better off due to the PES scheme. (Source: Wunder, 2009)

4.2.1.3 The overlap

PES schemes make use of incentives instead of explicit rules in order to reach behavioural change, meaning they are part of the wider range of incentive-based mechanisms (Jack et al., 2007). How PES fits into the overall range of mechanisms can be seen in figure 8.

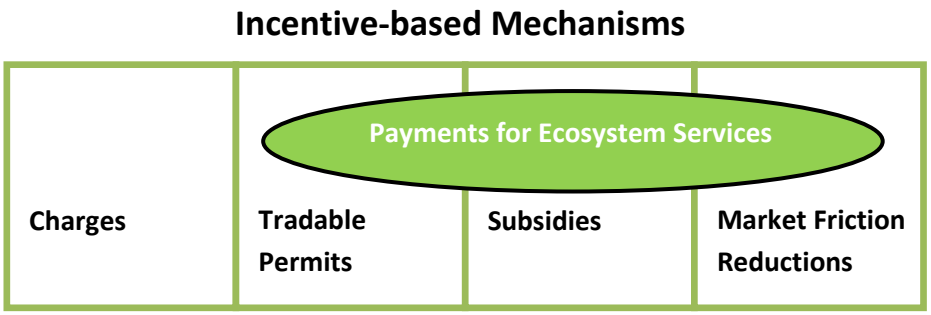

Figure 8. The placement of PES within Incentive systems (adapted from Jack et al., 2007)

Tradable permits form a MES where ecosystem service permits are traded between parties (Gómez-Baggethun et al., 2010). An example of a market for ecosystem services is the trading of greenhouse gasses, while carbon sequestration programmes are a type of PES (Gómez-Baggethun et al., 2010).

4.3 Both sides of market-based incentives

This paragraph sums up the advantages, disadvantages and in what situations incentive schemes would be most suitable.

4.3.1 Advantages

Paying for environmental services is said to have large potential to change people's view on nature (Redford & Adams, 2009) and internalize the value of the environment into the population's decisions (Engel et al., 2008). One of the benefits is the direct payment for conservation, but only when the environmental services have actually been delivered (Wunder, 2005; Engel et al., 2008). An example of a successful market incentive scheme can be found in box 1.

A major argument for market incentives is that they are a cost-effective solution (Tietenberg & Johnstone, 2004; Tietenberg, 2003; Stavins, 1995; Stavins, 1998; Jack et al., 2007). Permit trade results in the flow of permits to those that value them the most, while those that have lower costs to cut their emissions will do so and sell their permits (Tietenberg, 2003; Stavins, 1998). Both parties benefit as the seller earns money from the sale while the buyer values it more than the amount he paid for it (Tietenberg, 2003). Lowering the compliance costs also allows the setting of more strict caps and higher baselines (Tietenberg, 2003). However, both TEAs and PES systems go paired with transaction costs. These costs come from the baseline studies, monitoring, enforcement and negotiating contracts (Jack et al., 2007). Even if these costs hinder large levels of trade, the total costs are not likely to be larger than that of the command and control approach and other policy instruments (Stavins, 1995; Tietenberg & Johnstone, 2004).

Market incentive systems also offer the opportunities of combining multiple goals, as poor communities can sell their environmental services to strengthen their income (Wunder, 2005). However, combining multiple issues might drive up transaction costs, rendering the main advantage of the market-based incentive obsolete.

4.3.2 Disadvantages

Market-based incentives are, however, not a flawless solution. According to Redford and Adams (2009), like any appealing idea, it has been adopted quickly, but often without critical discussion. An example of a programme considered to be not so successful can be found in box 2.

Box 2: The early Environmental Protection Agency Emissions Trading Programme

The EPA in 1974 began with a TEA for air pollutants to replace the command and control measures and introduce more flexibility. Economic gains from the programme were substantial, but the environmental quality remained largely unaffected. One of the main reasons was the underdevelopment of markets, due to interest groups pushing for a wide array of different policies, preventing the programme to reach its full potential. Success is more likely when there is consensus about the nature and the goals of the programme. (Source: Hahn & Hester, 1989)

One of the often named fears is the 'commoditisation' of environmental services (Armsworth, et al., 2007; Redford & Adams, 2009; Engel et al., 2008). The incentive systems leave the resources that are not included in the system unprotected (Dietz et al., 2003; Engel et al., 2008). The service might also be provided in a way that is best for economic returns, but not beneficial to maintaining biodiversity (Redford & Adams, 2009). A solution would be to combine the multiple resources, as well as objectives such as biodiversity protection (Redford & Adams, 2009).

Another concern is that introducing market incentives can weaken societal ties and reciprocity values within these communities (Wunder, 2005; Gómez-Baggethun et al., 2010). Interestingly, this is mainly a threat when payments are small, but this is the case in most PES schemes (Wunder, 2005).

Two different fears related to market-based incentives are the possibility of leakage and lack of additionality. Any control programme has to deal with the possibility of leakage from a regulated to an unregulated source (Stavins, 1998; Tietenberg, 2003; Engel et al., 2008). This issue becomes larger for international programmes as for example emissions would increase in countries that do not participate in the system (Stavins, 1998). The aspect of additionality, or more specifically the lack

thereof, relates to the risk of paying for what would have been done anyways (Engel et al., 2008). Both issues can be tackled by setting a carefully assessed and clear baseline (Engel et al., 2008).

4.3.3 When Are Market Incentives the right option?

TEAs are most beneficial when the costs of complying with a cap or a minimum baseline differ greatly between participants, as it stimulates permit trade (Stavins, 1998; Jack et al., 2007). In the case of PES, payment schemes are most effective when land users can be stimulated to change their behaviour at a reasonable cost (Wunder, 2005; Engel et al., 2008). Poor farmers that cannot do any significant environmental damage are not suitable PES participants as they do not form a credible threat (Wunder, 2005). Introducing PES in areas where resource degradation is rampant due to its profitability is also not likely to be effective as the offered payments will be insufficient or make the system too expensive (Wunder, 2005; Engel et al., 2008). PES is most useful in areas where there is an intermediate threat of resource degradation, or where a threat is expected to emerge, meaning small payments can change the actions of land users to one favourable to the protection of the resource (Wunder, 2005). Another important aspect is to determine what really causes the mismanagement of resources (Engel et al., 2008). Market incentives help when environmental benefits are externalities for the managers (Engel et al., 2008). However, in some cases mismanagement may be because local ecosystem managers do not have property rights, or because of lack of information or awareness on management. In these cases secure property rights and education are better ways to solve the degradation of common resources (Engel et al., 2008).

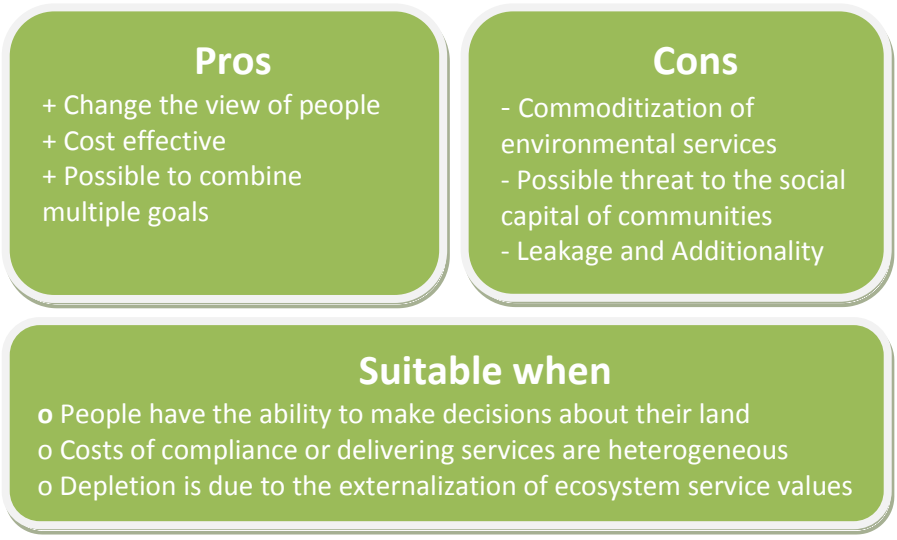

Figure 9. The benefits and disadvantages of market-based incentives

4.4 Important aspects

There are several key issues on which the success of market-based incentives depends.

4.4.1 Monitoring and enforcement

Non-compliance makes it harder to determine whether set goals are being met and can prevent the program from reaching its objectives, this is a consequence of poor monitoring and enforcement and forms the base of previous failures (Tietenberg, 2003). However, the costs of monitoring can be significant (Stavins, 1998). Advancement in technology has been key in reducing the costs of monitoring and enforcement to an acceptable level and some cases, the costs can be financed from the increased revenues due to the incentive system (Tietenberg, 2003). To reduce non-compliance, a set of sanctions should be enforced (Tietenberg, 2003). The steepest penalties are not necessarily the

most effective ones. They have to be proportionate to the benefits of free-riding and the risk of getting caught (Tietenberg, 2003). International incentive programs depend greatly on the effectiveness of enforcement on national levels (Tietenberg, 2003).

4.4.2 Property rights

Another important aspect of incentive systems under debate is closely linked to the discussion in the common resource literature: property rights.

In the case of TEAs, popular literature refers to tradable permits as privatizing the resource (Anderson, 1995, as used by Tietenberg, 2003), while this is usually not the case. Instead, the right to access the resource to a certain degree is privatized (Tietenberg, 2003). Economists argue permits have to be backed by secure property rights to incentivize investment in the resource. However, the environmental community states these resources belong to the entire community and should not be privatized (Tietenberg, 2003). The practical solution is often to offer enough, but not complete security. What this comes down to is that permits cannot just be confiscated.

Regarding PES, Wunder's (2005) first point of definition of a PES is 'a voluntary transaction'. This implies providers should be free to make decisions with the resource. Just like in TEAs, when land users have more secure property rights, they are more likely to cooperate (Goldman et al., 2007). The problematic issue is that many land users do not officially own the title to these lands. Wunder (2005) stresses that not de juro, but de facto ownership is what counts. If the tenure of a community is respected, they can be environmental service providers, regardless of official ownership. If the ownership is weak, PES cannot take place due to a major threat that external parties will seize control of the land. The more similar the situation is to open access, the harder it is to implement PES. There is not one easy solution and pragmatism is recommended. An incentive system can help to strengthen weak property regimes and pay for a part of the compliance costs (Wunder, 2005).

4.4.3 Flexibility

Crucial to an effective incentive system is flexibility (Pagiola et al., 2002, as used by Zbinden & Lee, 2004). TEAs were feared to be rigid due to the need to provide adequate security (Tietenberg, 2003). Rigidity would prevent adaptations to changes in the resource or when new improved information comes to light. To increase flexibility, multiple ways to comply with the system should be allowed (Stavins, 1998; Jack et al., 2007). This will improve the resilience of the system to price changes that can change the level of cost-effectiveness (Jack et al., 2007). In TEAs, this boils down to allowing flexible timing through means of 'banking' permits for future use (Ellerman et al., 1997, as used by Stavins, 1998). In the case of PES, this would mean allowing the providers to find different ways to provide these services (Wunder, 2005). Well-designed systems are more flexible and can reduce the costs to meet environmental goals considerably (Tietenberg & Johnstone, 2004; Jack et al., 2007).

4.5 Context

Market incentive mechanisms are not developed in a void (Engel et al, 2008). Similar to the field of common resource management, the literature on market incentives stresses the importance of looking at the wider context (Engel et al., 2008; Jack et al., 2007; Daily & Matson, 2008). Most studies on ecosystems view people as exogenous variables that have to be managed or avoided (Armsworth, et al., 2007). Instead, it should be recognized that the human population is integral to ecosystems and must be included in studies regarding ecological systems and its management (Armsworth et al., 2007; Daily & Matson, 2008).

4.5.1 Political barriers

Political feasibility can make or break any proposed mechanism (Tietenberg & Johnstone, 2004; Stavins, 1998; Jack et al., 2007). The political power of the parties influenced by the benefits and costs has a major impact on the design and implementation of the mechanisms and regulations and subsidies can interfere with the incentive system (Jack et al., 2007). Understanding the existing political system and the desires of all involved parties is essential in designing an incentive system that is effective and feasible. Stakeholder empowerment is key to reach political feasibility, incentive system development and implementation needs to take stakeholder needs into consideration from the start and be collaborative (Redford & Adams, 2009; Daily and Matson, 2008). However, these cooperative schemes can also lead to higher transaction costs as more stakeholders lead to higher complexities (Goldman et al., 2007). The political system also places a lot of importance on distributional equity (Stavins, 1998). Combining environmental conservation with other objectives such as poverty alleviation would increase political support for the system. However, this might come at the cost of the efficiency of the system (Stavins, 1998).

4.5.2 Environmental context

Aspects of the specific ecosystem also need to be taken into consideration. Jack and colleagues (2007) argue the incentive scheme needs to fit the flow of benefits from the ecosystem service. When each ton of prevented pollution has the same benefits, the flow is constant and the incentive system can be simpler than in services without a constant flow. For example, only a big enough area of preserved nature would ensure the survival of some species. The costs and complexity of an incentive system also depends on the strengths between the benefit and that what is measured (Jack et al., 2007). Often the actual environmental effects of an action are difficult or expensive to measure, so proxies that are easier to measure and are related to the benefits are often used. When proxies are strongly related to the benefits, incentive systems will be easier to implement.

4.5.3 Soft Effects

How actors perceive the incentive system over time is a ‘soft effect’ that has only recently received more attention. It appears that it takes time for incentive systems such as TEAs to be fully understood by participants. In the beginning when the users are not accustomed to the system yet, there might be price volatility and other consequences that can undermine the development of the market-based system (Tietenberg & Johnstone, 2004). Practice therefore teaches that it is best to wait until users are accustomed before a system can be judged on its effectiveness.

4.6 Combining Multiple Objectives

Environmental services can be combined in a synergetic package (Wunder, 2005), with other environmental services or objectives such as poverty alleviation, all with significant impacts on the design of the system (Engel et al., 2008). Combinations such as conservation with development are win-win situations that have recently flourished due to research in the integrations of ecology, economics and institutions (Daily & Matson, 2008). Such combinations increase the political feasibility of conservation and incentive systems. However, these win-win opportunities may exist, but they have also become increasingly rare in the global system (Farber et al., 2002).

4.6.1 Poverty Alleviation

Human welfare is an objective that is often implicitly or explicitly combined with environmental conservation (Engel et al., 2008). Systems such as PES and TEA have been designed for preserving

natural resources, not poverty reduction. However, many assume that these systems will do this by making payments to impoverished land users, while others fear the incentive systems will decouple conservation from development (Wunder, 2005; Engel at al., 2008). Power asymmetry could lead to those interested in conservation to deprive communities of their lands, while commercialization would hurt cultural conservation values (Wunder, 2005). Studies have shown that PES payments often end up with wealthy and educated farmers instead of the very poor (Zbinden & Lee, 2004; Ostrom, 2008). Efficiency and equity goals can conflict, meaning these multiple goals might have to be balanced (Zbinden & Lee, 2004; Wunder, 2005; Jack et al., 2007).

The issue of participation of the poor deals with two major constraints: the poorest people often do not own or control land, ruling them out as PES candidates and many small providers drive up the transaction costs of a system (Wunder, 2005; Jack et al., 2007). Working together with an NGO or strong communal ties can help to reduce these costs (Jack et al., 2007). Poor farmers do tend to own marginal lands of less quality, which results in lower opportunity cost to switch to conservation (Wunder, 2005; Jack et al., 2007). When the poor are able to participate in the incentive system, studies show that despite potential power asymmetries, the benefits can contribute a considerable share of household income (Wunder, 2005). Incentive schemes can also strengthen ownership security for the poor. A negative effect can be negative tensions between participants and non-participants (Wunder, 2005). What often hinders poverty alleviation is the small scale in which PES systems are applied (Wunder, 2005). Important to consider is that if poverty alleviation drives up the costs of the incentive systems, nobody will buy the environmental services, meaning the poor will also not receive any benefits. Poverty reduction is indeed an important side-objective, but it should not jeopardize the functionality of the system and become the primary objective (Wunder, 2005).

4.6.2 Biodiversity

A large concern of introducing market-based incentives is that it will result in the commoditization of environmental services (Redford & Adams, 2009; Gómez-Baggethun, 2010). Optimizing value of the services does not necessarily lead to the conservation of biodiversity, if they do not have to be provided by native species. Bundling services might be a solution to keep biodiversity intact. However, this might also lead to unsatisfactory economic efficiency, making it unattractive to decision makers (Redford & Adams, 2009).

4.6.3 Trade-Offs

Creating win-win solutions by bundling multiple objectives sounds appealing and will result in improved political feasibility. However, such policies might sound good in theory, but working out the actual system is difficult (Ostrom, 2008). Wunder (2005) stresses it does not make sense to force linking conservation and poverty reduction when the synergies are offset by losses in efficiency. Similar to previous attempts to integrated solutions, the criteria used for judgment might be too ambitious while the objectives are too many (Zbinden & Lee, 2004). Combining incentive systems for common resource management with multiple other objectives should be done carefully (Wunder, 2005). It would limit the reach to the private sector, and thus financing opportunities, lose efficiency and buckle under the weight of good intentions (Wunder, 2005).

4.7 The potential of Market-based Incentives

Environmental services have tremendous value, but value is not the same as price. In order to solve the trade-off between local profits and global costs of resource depletion, the value of ecosystems

need to be internalized. Some fear this will lead to commoditisation, but other attempts for conservation have not worked. Sustainable forestry does pay, but unsustainable forestry pays more (Pearce, 2001b). Creating markets for environmental values can potentially change the view of decision makers on the value of nature.

Market based incentives are said to be cost effective in comparison to demand and control. However, many factors influence the potential success of such a system. Secure property rights are essential, which does not always mean full property rights, but enough security for users to be willing to invest. Land users need to have the ability to make land decisions. To make the system resilient to changes, the possibilities for compliance should be flexible. Same as with command and control, accurate monitoring and sufficient enforcement is key to success.

A system might work perfectly in theory, but the context is vital. Political feasibility determines whether a system will be implemented and thus it is key that different stakeholders can reach an agreement. It is essential that stakeholders share the same understanding. A flow of information is necessary for people to understand the values of ecosystems, which does not automatically emerge from markets (Pearce, 2001a). Market-based incentive literature states collaborative creation and combining multiple issues might reach this goal, but this can also drive up the costs of the incentive system. However, it seems that this body of literature is unaware of the common resource management literature, which shows local community involvement offers potential for creating a solid monitoring and enforcement system. This is an essential aspect for market-based incentive success. According to Dietz and his colleagues, TEAs and communal property have opposite strengths and weaknesses. Therefore a combination of both might be very effective. Collaborating with local people can create benefits for the people and help to limit costs. Such collaboration can also suit local needs and culture and reduce potential conflict (Ostrom, 2008). Laerhoven and Ostrom (2007) state macro level governance is likely to be more effective, but also less likely to happen than communal governance, since the latter is easier to organize in reality. Cooperation between higher authority levels and communities would achieve more effectiveness while maintaining the benefit of increased easiness of organization. Co-management with local people may be vital for success.

Combining multiple environmental services can increase costs due to increased complexity, but it can also potentially prevent one of the main negative aspects of market incentives; namely detrimental effects on biodiversity. Forest ecosystems provide multiple benefits including biodiversity, which suggests that conserving forests would lead to synergies between delivering all services. However, for each service a separate market tends to be created. As biodiversity is hard to valuate, it is also hard to market and thus tends to be undervalued.

More research needs to be done on how the incentive systems deal with potential trade-offs and synergies in combining multiple environmental services and objectives (Jack et al., 2007; Goldman et al., 2007). Other opportunities for research are analyzing PES schemes at a larger scale (Jack et al., 2007) and how to engage key stakeholders (Goldman et al., 2007). However, market-based incentives should not be treated as a silver bullet. Wunder (2005) and Engel et al. (2008) summarize that market-based incentive systems are promising tools for conservation, but should be part of a larger conservation strategy. Engel and colleagues (2008) even go so far in suggesting that the main question might not be whether market approaches should be stimulated over government intervention, but what might be the optimal combination of mechanisms for resource management.

5. Reducing Emissions from Deforestation and forest Degradation

Mobilizing the global society to finance and implement market incentives together with those making use of forest lands forms a formidable institutional challenge. However, the potential benefits are large enough to spur the necessary actions (Chomitz et al., 2006). REDD is pointed out as a potential mechanism for an international market-incentive scheme (Gómez-Baggethun et al., 2010). This chapter delves deeper into key areas as identified by the literature. It starts with the different definitions attributed to REDD and the main debates. The following sections analyze the financing, scale, objectives, governance and implementation, forming agreements and the limitations of REDD, to be wrapped up with a conclusion.

5.1 Beyond the abbreviation

The abbreviation REDD stands for Reducing Emissions from Deforestation and Forest Degradation, but the different meanings attributed to REDD go far beyond this abbreviation. Some paint REDD as an international framework battling deforestation, with the added opportunity of conserving vital ecosystem services, biodiversity and fighting poverty (Holloway & Giandomenico, 2009). However, the United Nations Framework Convention on Climate Change (UNFCCC) focuses more on carbon emissions, picturing REDD as a wide set of approaches that will reduce emissions from deforestation and degradation (Angelsen & Wertz-Kanounnikoff, 2009). According to Venter and Pin Koh (2011), the basic idea of REDD is that prevention of degradation or forest loss leads to carbon dioxide not being emitted. If reductions of emissions are below a reference level, they are additional and can be turned into credits that can be traded on the carbon markets after a rigorous process of measuring, reporting and verification (MRV). Others call REDD a form of PES, which results in developing countries receiving financial incentives to stimulate sustainable forest management (Simoes et al., 2011). Others say creating a multi-level PES is a core issue in REDD, but that it is one tool of REDD only, as it will also include policies such as tenure reform and reducing the demand for forest products and land (Angelsen & Wertz-Kanounnikoff, 2009). REDD therefore is not a pure market-based incentive.

In 2005, the idea of using carbon credits to curb deforestation was revitalized by the Coalition for Rainforest Nations (Laurance, 2006). The negotiations of 2007 in Bali expanded the programme with degradation (Cerbu et al., 2010). The Bali Action Plan launched a demonstration phase, calling for pilots looking into the potential for delivering multiple benefits through REDD. A‘+’ was also added, to indicate a broadening of the project to include forest conservation, enhanced forest management, reforestation and afforestation (Venter & Pin Koh, 2011). One thing, however, is clear. The exact rules that will govern REDD still have to be established (Karsenty, 2008).

5.1.1 The Main Debates

In Bali, five issues surfaced that have yet to be resolved (Holloway & Giandomenico, 2009):

1) Measurement, reporting and verification
2) Financing options
3) Scale and Institutional arrangements, referring to whether REDD activities would be national or at a project level.
4) The rights of indigenous people
5) Scope, what should be included in REDD?

The first point relates to the more technical side of REDD. Setting baselines and ensuring additionality as well as permanence are issues often discussed in REDD articles. Key to note is that behind decisions on the technical aspects of REDD is a world of politics (Wertz-Kanounnikoff, 2010). This bullet point in the list can pose limitations on REDD, but it is not an obstacle to move ahead (Wertz-Kanounnikoff, 2010). This research will therefore focus on the remaining points. Both finance and scale are discussed. The body of literature on REDD shows there is some discussion on what exactly the goals are of REDD and what REDD could potentially harm or benefit. This discussion also includes the rights of indigenous peoples. This is then followed by a section on governance and implementation, as governance including the issue of land tenure are often mentioned as hurdles for REDD. Next is an analysis of the potential overarching international agreement, Top-Down or Bottom-Up implementation and how understanding and trust influence the debates. The last point of discussion as found in the literature ties in with scope and concerns what the limitations of REDD are.

5.2 Funding

One of the major unclear issues concerning REDD at the moment is how it should be financed. At the UNFCCC the debate is whether to use market-based mechanisms or funds (Miles & Kapos, 2008). Potentially enormous amounts of money are involved (Grainger, et al., 2009).

5.2.1 Markets

Using a market for financing would mean trading credits. This can be done on the carbon compliance markets or the voluntary market. The global carbon market traded a total of $ 142 billion in the year 2010 (Venter & Pin Koh, 2011). Nearly half of the carbon credit demand originates from the compliance markets, meaning the credits bought and sold are used for meeting obligations under the UNFCCC (Venter & Pin Koh, 2011). REDD is not incorporated into the Clean Development Mechanism of the Kyoto Protocol, but current negotiations are debating whether REDD should become part of a new long-term cooperation under the UNFCCC (Venter & Pin Koh, 2011). The international carbon market could lead to billions of Euros annually for forest conservation (Ebeling & Yasué, 2008). Becoming part of the compliance market could even make REDD competitive with the likes of palm oil (Venter, et al., 2009). However, REDD should be designed to prevent removing incentives for domestic actions to cut emissions and develop cleaner technologies (Venter & Pin Koh, 2011; Maslin & Scott, 2011). Or to use the more dramatic words of some of the critics, allow rich nations and corporations to pay off their sins with REDD credits (Ghazoul et al., 2010). A solution would be to establish a ceiling on the amount of REDD credits that can be used, or setting separate REDD targets (Venter & Pin Koh, 2011; Maslin & Scott, 2011). Voluntary markets such as the Chicago Climate Exchange offer two main advantages over the regulatory compliance market; lower transaction costs and absence of pre-approval requirements (Dargusch et al., 2010).

Investors purchasing from the carbon markets are likely to be motivated by a wide variety of reasons, such as the desire for profit and the reduction of corporate risks (Dargusch et al., 2010). According to Bayon et al. (2007, as used by Dargusch et al., 2010), investors want to find the investment that gives them the greatest public relations, political or ethical return for their money. The multiple benefits REDD has to offer could possibly lead to a justification for higher costs. This contrasts with the idea that using markets for carbon leads to commoditization that hurts the other ecosystem services forests offer.

The biggest benefit associated with markets is that it could potentially generate more money over a longer period of time (Wertz-Kanounnikoff, 2010; Miles & Kapos, 2008). Market instruments are effective for improving efficiency (Karsenty, 2008). Carbon is also an ecosystem service that can be marketed more easily than most (Miles & Kapos, 2008). However, a concern is that trading REDD credits might not influence the socio-political underlying drivers of deforestation (Karsenty, 2008).

5.2.2 Funds

The other option is a fund structure, for example through voluntary donations or taxes linked to the carbon market (Wertz-Kanounnikoff, 2010). Karsenty (2008) argues in favour of an international fund, as it would prevent the carbon market from flooding and enable policies and structural changes to take place in and outside of the forestry sector without having to calculate the quantities of carbon saved. It would also mean that any reduction is additional to the international agreement (Wertz-Kanounnikoff, 2010). However, it also creates the risk of reaching insufficient levels of funding (Wertz-Kanounnikoff, 2010).

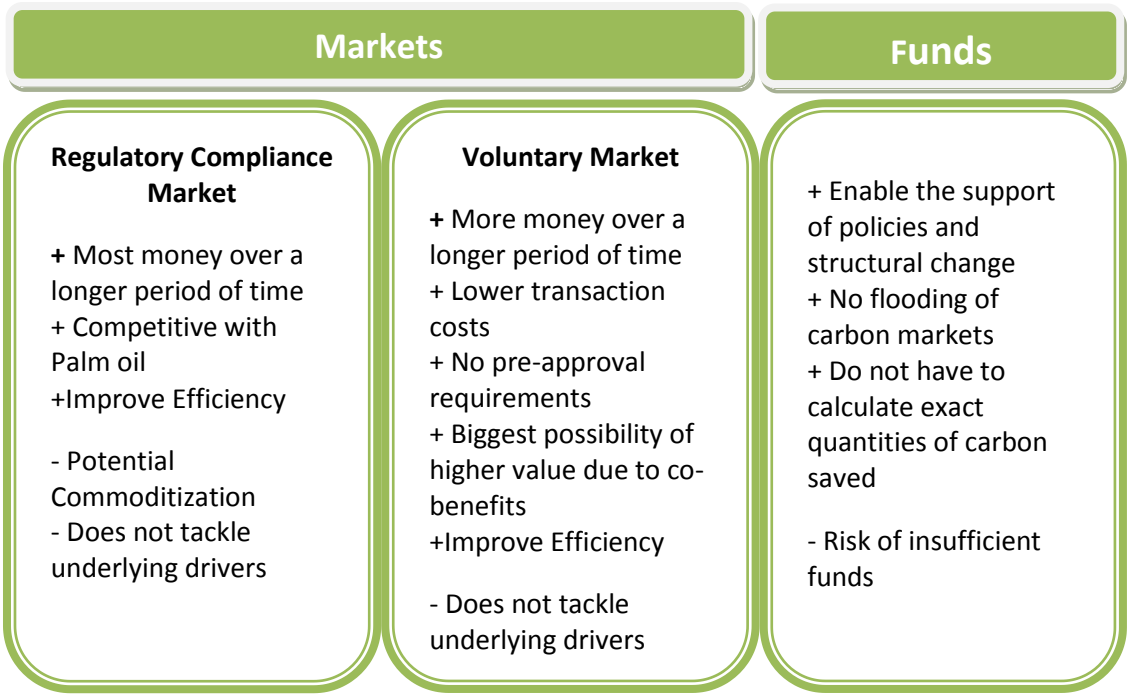

Figure 10 The benefits and disadvantages of market mechanisms and funds for financing REDD

5.2.3 Transition

What is likely to happen is that first, most money will come from voluntary funds in order to establish an enabling framework, build capacity and REDD demonstration activities (Wertz-Kanounnikoff, 2010). Then slowly markets will start to contribute more and end up providing the bulk of the money (Wertz-Kanounnikoff, 2010). Regardless of whether REDD will be financed through voluntary funds, market mechanisms, or a mix, the most vital will be to generate sufficient funds, sustained over time, reaching the appropriate stakeholders (Harvey et al., 2010).

5.3 Scale

One of the key issues in the REDD debate is the geographical scale of REDD activities: sub national, national or at both levels (nested) (Angelsen et al., 2009). The differences between these levels are often blurred, as 'spatial scale' has different meanings for different parties, but in most cases, it refers to the level of accounting and thus the level rewarding credits (Angelsen et al., 2009).

On a sub national scale, local projects will receive the internationally awarded credits directly. In the national approach, each country is responsible for implementing measures and policies and possible credits will be awarded to the country as a whole (Angelsen et al., 2009). This does not mean projects at a sub-national level will not receive benefits, the country itself is responsible for ensuring benefits to the local level. Due to the wide range in national circumstances, a nested approach has also been put forward in several REDD proposals. This approach ensures REDD activities can be started at any level and offers the opportunity for sub national approaches to be scaled up to a national one over time (Angelsen et al., 2009). It also means credits can be received at both levels. The accounting and verification procedures will be conducted on both scales, after which they have to be harmonised. After the end of an accounting period, national governments will have to deduct any credits already issued to local projects from those awarded to the country as a whole (Angelsen et al., 2009). A graphical depiction can be found in figure 11.

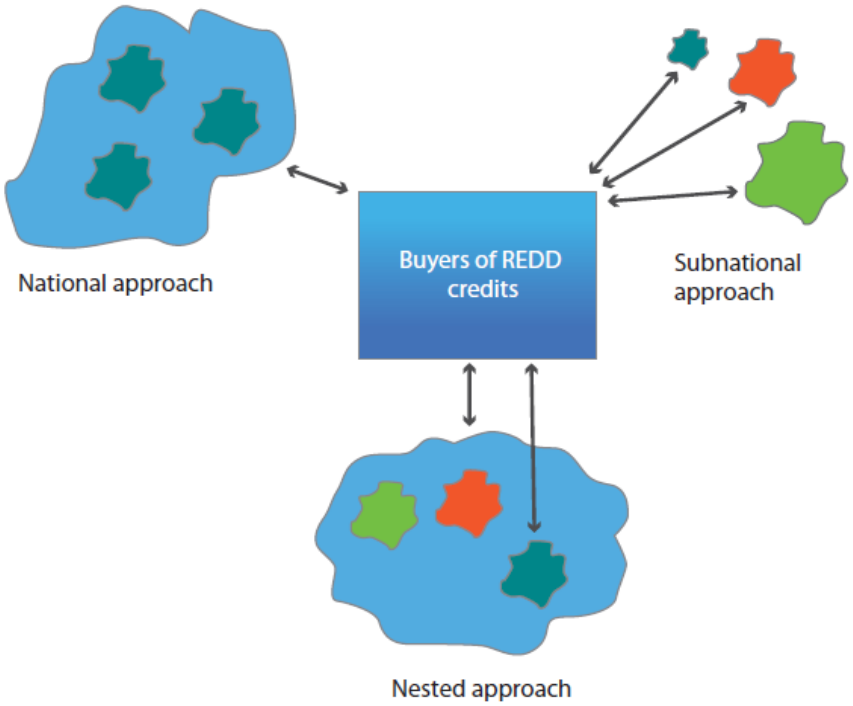

Figure 11 The three scales of accounting and crediting (arrows indicate information from the entity and money from the international buyers (Source: Angelsen et al., 2009).

REDD in its early stages has been mostly project based, and many countries are likely to start their REDD programmes with a sub national approach (Stickler, et al., 2009; Venter & Pin Koh, 2011). However, there has been a strong push for accounting of saved emissions to occur at a national level. The main reason is that it would prevent leakage, meaning prevented deforestation in one area will not simply move to a different area in the country (Phelps et al., 2010; Strassburg et al., 2009; Venter & Pin Koh, 2011; Stickler, et al., 2009; Angelsen & Wertz-Kanounnikoff, 2009; Angelsen et al., 2009). However, a risk of international leakage remains (Strassburg et al., 2009; Venter & Pin Koh, 2011). Other reasons are improved insurance of permanence, more reliable MRV (Phelps et al., 2010) and the ability for governments to put in place a broad set of policies such as tenure reform (Angelsen et al., 2009; Seymour & Angelsen, 2009). The most important drivers of deforestation are underlying factors that are heavily influenced by national governments (Strassburg et al., 2009) and thus a solution at that scale is necessary (Angelsen et al., 2009). On the downside, developing countries

with limited resources might focus on carbon-rich forests only, potentially undermining other ecosystems and social welfare (Grainger, et al., 2009). Karsenty (2008) also questions this approach, as additionality is even harder to assess at a national level and governments so far have been far from neutral when it comes to protecting forests and the common interest.

Sub national level approaches are able to get started easier, attract private sector finance and be better suited for the application of safeguards (Wertz-Kanounnikoff, 2010; Seymour & Angelsen, 2009). A nested approach would be preferred by some as it compensates at the community and the national level (Sunderlin et al., 2010). It would combine elements of centralised and decentralised approaches to reach an optimised governance approach (Seymour & Angelsen, 2009). This would result in the force of the larger scale national efforts combined with the sub national knowledge of local drivers and conditions (Springate-Baginsky & Wollenberg, 2010). Although a nested approach would be more flexible and realistic in the short run, it does raise the issue of harmonisation and credit sharing (Wertz-Kanounnikoff, 2010).

Even if it is likely that accounting will happen at a national scale, implementation will also still happen at a project level (Miles & Kapos, 2008). According to Angelsen et al. 2009, the scale of implementation is of secondary importance in comparison to accounting and crediting, as a national scale in the latter would still include national and local projects, while a sub national scale could still be backed by solid national policies.

SUB NATIONAL	+ Broad short-term participation + Attractive for private sector finance + Easier participation of countries with weak governance + More opportunity for community involvement and safeguard implementation	- Domestic Leakage - Does not result in the required policy changes - Weak involvement of national government
NESTED	+ Combines the strength of the other two + Flexible an realistic in the short run + Possible to target communities + Increase country participation + Possibility to scale up	- High MRV costs - Challenge of harmonizing the different levels
NATIONAL	+ Broader set of policies + Capture domestic leakage + Better aligned with national development strategy + Better insurance of permanence + More reliable MRV	- Potential for governance failure - Risk of Elite capture - Weak involvement of national government -When countries lack resources, potential harm to other ecosystem services and social welfare

Figure 12 The advantages and disadvantages of the three scales

5.4 The Goals

The primary goal of REDD for the majority is reducing global carbon emissions (Caplow et al., 2011; Ebeling & Yasué, 2008; Stickler, et al., 2009). However, REDD remains a politically volatile issue as it is questioned whether REDD will provide an array of co-benefits or will actually damage other ecosystem services and social issues (Caplow et al., 2011; Stickler, et al., 2009). In theory, REDD can potentially address climate change, rural poverty, provide a wide range of ecosystem services and conserve biodiversity (Ebeling & Yasué, 2008; Laurance, 2006; Skutsch, 2005). Some even say it could improve forest governance (Angelsen & Wertz-Kanounnikoff, 2009). However, these co-benefits do not automatically arise, despite the assumption in projects so far that impacts on biodiversity and ecosystem services are positive as more forest is preserved (Caplow et al., 2011). Also, not everybody believes REDD will deliver them. They see REDD as a voluntary scheme benefitting the wealthy while little benefits are generated for forest dwellers (Clement & Clement, 2008). There is concern whether REDD will violate the rights of indigenous and local communities to access the lands they need for their livelihoods (Ghazoul et al., 2010; Gilbertson & Reyes, 2009). It is also feared that reducing complex forest ecosystems to simply carbon will lead to undervaluation of other ecosystem services (Laurance, 2006). REDD will have no additional benefits and even cause damage if REDD is poorly designed and implemented (Grainger, et al., 2009), so what must be done to assure the co-benefits?

5.4.1 How to ensure community co-benefits

Community commitment is essential for a REDD programme to succeed (Weeks & Filardi, 2011). To achieve such a commitment, incentives have to be provided for a legitimate community-governance structure with equitable benefit sharing, clear property rights and meaningful participation (Weeks & Filardi, 2011; Caplow et al., 2011; Ghazoul et al., 2010; Springate-Baginsky & Wollenberg, 2010). Standards are being put in place stating that REDD projects must have no negative impacts on the well-being of communities (Springate-Baginsky & Wollenberg, 2010; Ghazoul et al., 2010) but the exact mechanisms remain unclear (Ghazoul et al., 2010) and communities and human-rights organizations are afraid the provisions are too weak to protect the rights of the forest peoples (Anonymous, 2011). In existing PES projects researched by Bond and colleagues (2009), no evidence was found of negative effects on local livelihoods. In schemes purposely targeting marginalized groups, there were even positive, albeit somewhat marginal benefits. However, there is a concern that implemented at a large scale or with weak governance, REDD benefits might be reaped by the elite, leading to unequal benefit distribution (Bond et al., 2009; Simoes et al., 2011).

5.4.2 Ensuring biodiversity and ecosystem services co-benefits

Similar to ensuring community benefits, linking carbon projects to standards for biodiversity and other ecosystem services will help prevent negative consequences caused by a carbon focus (Putz & Redford, 2009). Otherwise there is a risk that forests will be replaced by high carbon absorbing plantations (Stickler, et al., 2009). Carbon markets, however, do not value ecological co-benefits at the moment (Ebeling & Yasué, 2008). A reliable and cost-effective system for monitoring and reporting ecological co-benefits will increase the likelihood that they will be realized and help identify REDD methods that deliver most co-benefits (Stickler, et al., 2009; Miles & Kapos, 2008). The valorisation of carbon can be seen as a test for valuating other forest services in the future (Skutsch, 2005). To promote the ecological co-benefits, REDD project performance regarding ecological standard can be measured, resulting in credit premiums (Stickler, et al., 2009). Another option is to develop separate biodiversity credits and create a market for these or to make use of the current

biodiversity conservation fund to help implement biodiversity in REDD programmes (Venter & Pin Koh, 2011; Grainger, et al., 2009; Ebeling & Yasué, 2008).

5.4.3 Synergies or overburdened?

In some cases areas that are cheap for emission reduction are also essential habitats for species, but such win-win scenario's are not always the case (Venter, et al., 2009; Blom et al., 2010). If a government for example decides to focus on a few large agro-business players, the potential for development benefits are a lot smaller (Ebeling & Yasué, 2008). REDD is not the first programme to integrate climate preservation and development. Integrated Conservation and Development Projects (ICDP's) attempted the same, but the link between poverty and conservation turned out to be very speculative and ICDP's do not have a good record (Blom et al., 2010). As all other tools before, REDD will face a trade-off between equity and effectiveness and efficiency (Wunder, 2009).

Some argue that the success of REDD may hinge on the ability to build on rather than conflict with the interests of local and indigenous communities (Caplow et al., 2011; Springate-Baginsky & Wollenberg, 2010). Previous rural development projects have failed due to the environment taking the lead while local people had little to say (Sunderlin et al., 2010). When REDD projects are inequitable, local communities may attempt sabotaging them (Blom et al., 2010). Delivering community benefits is what gives REDD its legitimacy (Brown et al., 2009). Investors in carbon markets may also be willing to pay more for credits that contain all benefits (Ebeling & Yasué, 2008; Laurance, 2008). There is a real danger of 'carbon fixation' which can create perceptions of unfair policies and result in political resistance (Wunder, 2009). It also causes policy makers to lose track of the integral complexities of a forest ecosystem (Cotula & Mayers, 2009). Maintaining ecosystem function requires coordinated landscape planning on an international scale, so all ecosystem services should be taken into account (Brown et al., 2009). However, an agreement of such scope is likely beyond an agreement focussed on mitigation carbon emissions (Brown et al., 2009). Many UNFCCC negotiators are aware of potential social and environmental downsides of the commoditization of carbon, but there is a risk of overburdening REDD with too many good intentions (Putz & Redford, 2009; Venter & Pin Koh, 2011; Brown et al., 2009). Combining all goals can complicate and therefore hamper the already sensitive and urgent climate negotiations by making it too complex (Venter, et al., 2009; Harvey et al., 2010). Therefore some plead for emission reductions to remain the main purpose (Venter & Pin Koh, 2011). So far there has been too little focus on efficiency and effectiveness as the REDD discussion is being side-tracked by other objectives (Wunder, 2009).

This debate shows a split between those that see equity and ecological co-benefits as a fundamental requirement, and those that feel it is erroneous to prioritize co-benefits at the expense of carbon emission mitigation (Sunderlin et al., 2010). Win-win situations are rare and it is essential to understand the interplay between co-benefits and how to best implement this knowledge in practice (Caplow et al., 2011). The degree to which synergies can be achieved depends on how REDD is implemented (Ebeling & Yasué, 2008). Further work is needed to ensure that REDD provides more than carbon benefits, but it would not make sense to reject REDD, simply because it does not solve all the world's problems (Laurance, 2008).

5.5 Governance and Implementation

The actual mitigation depends on implementation and good governance (Harvey et al., 2010). Carbon markets alone cannot overcome the need for good governance within countries (Ebeling & Yasué,

2008). National REDD initiatives will have to combine national coordination with solid local involvement and implementation (Seymour & Angelsen, 2009). One key aspect of implementation is how countries will engage key stakeholders and promote good forest governance (Harvey et al., 2010; Seymour & Angelsen, 2009). It is likely there will be tension between keeping central control and decentralizing responsibilities to local governments and communities (Seymour & Angelsen, 2009). This section will therefore go deeper into the issue of governance within REDD, what role different stakeholders can play and the issue of land tenure.

5.5.1 Governance

One of the biggest concerns for successful implementation is governance (Springate-Baginsky & Wollenberg, 2010; Sikor, et al., 2010). Governance failure often underlies deforestation and forest degradation (Bond et al., 2009). Bad governance is formed by elites capturing large profits while civil society has no say, widespread corruption, unenforced laws and ignored rights (Springate-Baginsky & Wollenberg, 2010). Weak governance also leads to difficulty in spreading the potential benefits of REDD to local populations (Ebeling & Yasué, 2008). Good governance is formed by political decision making that gives emphasis to legality, legitimacy and participation (Forsyth, 2009). Key issues are ensuring local benefits, recognition and enforcement of rights, including forest communities in decision making, effective local institutions and transparent and accountable forest management (Springate-Baginsky & Wollenberg, 2010; Forsyth, 2009; Ebeling & Yasué, 2008). Multilevel and participatory governance enables stakeholders with different degrees of political power to negotiate, create and implement policy and is necessary to settle differences between different parties and create trust for investors and local populations (Forsyth, 2009).

Governance will be a challenge for REDD, as countries that have the highest potential for REDD tend to score badly on governance indices (Ebeling & Yasué, 2008). Karsenty (2008) wonders if payments to governments are likely to change the issue of governance. Sikor et al. (2010) agree it will not be easy, but REDD and the recognition of people's rights may lead to broader changes in climate governance. REDD could provide the incentives to tackle corruption and improve governance (Ebeling & Yasué, 2008). Instead of putting REDD on hold before governance is improved, REDD should be used to contribute to governance reform by strengthening local rights, developing arrangements for benefit sharing and connecting national policy to international policy (Brown et al., 2009; Seymour & Angelsen, 2009; Cotula & Mayers, 2009).

5.5.2 Land tenure

A particularly challenging aspect of governance is land tenure, which in itself is a major driver of deforestation (Seymour & Angelsen, 2009; Brown et al., 2009; Springate-Baginsky & Wollenberg, 2010). Implementing REDD without addressing tenure could reduce the effectiveness, efficiency and most of all the equity of implementation (Seymour & Angelsen, 2009). Benefit sharing is a key component of REDD and benefits are difficult to distribute to those that have no de jure recognition of rights, but de facto control the land (Seymour & Angelsen, 2009; Brown et al., 2009; Springate-Baginsky & Wollenberg, 2010). Insecure tenure leads to conflicts and elites appropriating benefits(Sunderlin et al., 2010) and increased for investors due to possible reputational damages, limiting private sector involvement(Brown et al., 2009). Secure tenure for local people will increase their leverage in government and private sector negotiations (Brown et al., 2009). Acknowledging community rights can improve equity and efficiency of governance (Forsyth, 2009) as it leads to improved livelihoods, improved conservation and workable forest enterprises (Sunderlin et al., 2010).

It would also open up the opportunity for PES to be used as a tool for REDD (Wunder, 2009). Yet tenure has only recently surfaced as a point of importance in the REDD debates (Brown et al., 2009).

5.5.2.1 The double edged sword

A recent trend has been for government to decentralize their forest management and give local actors increased rights and responsibilities, REDD might cause a reversal of this trend (Phelps et al., 2010). A national REDD approach would make national governments the main stakeholder. The strict requirement on MRV may undermine decentralization as these costs would be too large for sub national projects (Phelps et al., 2010). The funding flow of REDD could diminish past cost saving reasons for decentralization and with large sums of money at play, governments could justify taking back the control (Phelps et al., 2010; Sandbrook et al., 2010; Larson & Ribot, 2009). Such top-down governance risks the eviction of forest peoples for the purpose of creating 'reservoirs' (Gilbertson & Reyes, 2009). An increased value of forest can create conflicts and corruption (Bond et al., 2009; Cotula & Mayers, 2009; Brown et al., 2009; Sandbrook et al., 2010).

However, REDD also provides the opportunity to tackle the troubling issue of tenure (Palmer, 2010). When REDD benefits depend on performance, the status of the forest will have to be transparent (Brown et al., 2009; Palmer, 2010). This heightened scrutiny of forest management caused by REDD could reinforce the implementation of safeguards and lead to improvement in human rights and governance (Brown et al., 2009). Rather than avoiding the tenure issue, REDD will have to make it a key area of focus (Cotula & Mayers, 2009). Implementing REDD could clarify land ownership (Seymour & Angelsen, 2009). However, this could potentially have negative consequences if forest users that manage the land but do not own it are passed over (Ghazoul et al., 2010; Springate-Baginsky & Wollenberg, 2010). It can put governments in a difficult scenario when they have to choose which group to grant the rights in the land tenure conflict (Karsenty, 2008).

Clear tenure alone will not ensure fair benefit sharing. (Brown et al., 2009). Rights also have to be legitimate and enforced (Springate-Baginsky & Wollenberg, 2010; Sunderlin et al., 2010; Cotula & Mayers, 2009). Furthermore, the scale at which decisions are made in itself does not imply effective forest management (Larson & Ribot, 2009). Local people may have better knowledge of the local environment, but they might still cut trees and degrade land if it is a profitable option (Larson & Ribot, 2009), which might even be more the case if land tenure is clear and thus investment more attractive (Wunder , 2009). Community involvement is key as discussed in the next paragraph, and for this recognition of local rights is necessary. This might prove to be a challenge, as international negotiations are struggling to include concrete measures (Sikor, et al., 2010).

5.5.3 Community Involvement

In line with the literature on common resource management, the involvement of local communities has been noted as key in the REDD literature. After all, who can manage forests better than those that live within them? (Agrawal & Angelsen, 2009). Forest peoples should be involved in the design, development and implementation of REDD from the start (Sikor, et al., 2010; Blom et al., 2010). Decentralizing decisions would make REDD more legitimate at a local level and spur local engagement (Larson & Ribot, 2009). At the moment however, the main concerns in REDD debates have been on reducing leakage and setting baselines, while little attention has been given to how forest community can participate in REDD (Springate-Baginsky & Wollenberg, 2010).

Besides being socially just, forest people's involvement can also be beneficial to the project. History has shown that indigenous peoples can be effective forest stewards and better than governments (White, 2011; Malhi et al., 2008; Sandbrook et al., 2010). Local forest governance can lead to co-benefits such as biomass storage and contributions to local livelihoods, possibly even at a lower cost compared to centralized governance (Sandbrook et al., 2010; Agrawal & Angelsen, 2009). A way to involve local communities is to decentralize monitoring of forest emissions (Seymour & Angelsen, 2009; Skutsch, 2005; Skutsch et al., 2009). Small changes in carbon cannot be picked up by remote sensing and community carbon monitoring could cost effectively fulfil this gap (Skutsch et al., 2009). A case study has shown that locals with 4 to 7 years of primary education and previous involvement in community forest management can be trained easily to conduct forest inventories using standard methods (Skutsch et al., 2009). Additional benefits are that the importance of community management will be highlighted, strengthening their claims on the benefits, as well as stimulate communities to get involved (Skutsch et al., 2009). However, carbon accounting will still require a degree of centralized management (Phelps et al., 2010).

In those cases that community management is a success, there is long-term political commitment to forests, support for local property rights and local economic development (White, 2011). Studies looking into the trade-offs and synergies between rural management and REDD goals will be essential, as well as practical research into low-cost community MRV strategies (Phelps et al., 2010). Community Forest Management (CFM) cannot solve all problems of forest governance; it is not immune to the issues of corruption and mismanagement. Putting too much focus on community involvement can also weaken the climate objective (Agrawal & Angelsen, 2009). However, REDD can improve the chances of success in CFM by recognizing customary management systems, promoting local participation and increase the benefits local people receive, leading to more effectiveness, efficiency and equity (Agrawal & Angelsen, 2009).

5.5.4 The Role of Government

Effective local management is not enough and neither are economic incentives. Command-and-control measures are essential to aid the implementation of REDD (Börner et al., 2010) and aid local communities in their de juro and de facto control over land (Wunder, 2009). Minimum standards for forest management and the rights of local peoples must be established and enforced by the central authorities (Larson & Ribot, 2009). Government has a vital role to play in enforcing legislating and tackling corruption (Malhi et al., 2008; Blom et al., 2010). They can legitimize and provide financing for community management and ensure local rights (Bond et al., 2009). Preferably, government will target reducing the cost burden of MRV by providing incentives to project developers and integrate local control and local knowledge into a national system (Dargusch et al., 2010). Sub national projects cannot be expected to tackle external threats such as illegal logging, thus collaboration between local and national scales is required (Blom et al., 2010).

5.5.5 Collaboration

Oversight at multiple levels of governance is essential to assess the benefits of the REDD programme (Maslin & Scott, 2011). Global institutions are not enough and need to be complemented with nested forest governance (Sikor, et al., 2010). Ideally REDD will have multiple overlapping schemes for MRV with both domestic and objective third-parties to transparently verify the results (Maslin & Scott, 2011). Such overlap offers multiple opportunities to learn which approaches are most effective. Local efforts also offer a safety net in case higher level negotiations fail. Some fear this will lead to

bureaucracy, but a perfect top-down system of governance is unlikely to ever succeed (Maslin & Scott, 2011).

Adaptive collaborative management is seen as a promising tool for designing resilient REDD projects (Blom et al., 2010). The challenge for REDD will be to implement the benefits of government run schemes and locally run schemes (Bond et al., 2009). An overview of the benefits and disadvantages of both can be found in figure13. A way to achieve such collaboration is a Cross-sector partnership, which involves different stakeholders with different levels of influence (Forsyth, 2009). This requires all involved parties to be able to communicate successfully, which could require long-term efforts to help forest peoples understand the deliberations and involve them (Forsyth, 2009). Collaboration requires trust that might not be there currently, but over time intermediaries such as NGOs can lead negotiations between government and local parties so trust can be formed (Wunder, 2009).

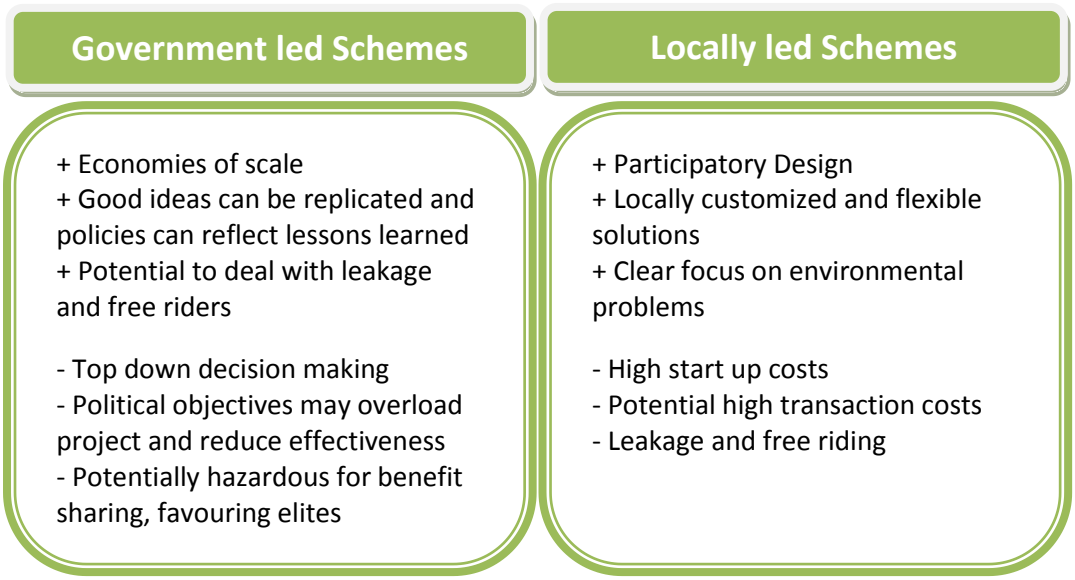

Figure 13 The benefits and disadvantages of Government and locally led schemes

Regardless of what scale the credits of REDD will be attributed, collaboration between national and local levels is necessary. PES could play a role in decentralization, as governments get paid by global carbon markets and partially delegate the provision of the service to local projects in return for a slice of the benefits (Wunder, 2009). If REDD payments are made without large scale efforts to create solid governance institutions and local empowerments, REDD will likely have more negative effect than benefits (Sandbrook et al., 2010).

5.6 Coming to an agreement

Most REDD articles refer to REDD as an international mechanism. However, REDD could occur at both the national and the international level (Bond et al., 2009). As can be seen in figure 14, an international scheme would involve payments between countries or the private sector and countries. A national scheme would involve payments between local national governments and local governments or forest managers.

Currently international negotiations have not yet resulted in agreements on issues such as scale and funding and it is likely it will take several years (Seymour & Angelsen, 2009). Those who move too quickly are exposed to risks that their assumptions might be erroneous and those that wait might

miss opportunities (Seymour & Angelsen, 2009). Some argue an international agreement is a necessity. The stringency of climate targets plays an important role, as it influences how large the market for REDD will be (Brown et al., 2009; Ebeling & Yasué, 2008). Global stakeholders are needed for the support needed for sustainable forest management (Wunder, 2009). According to Phelps et al., (2011), without mandated international emission reductions, the UNFCCC will be faced with convincing individual governments to pledge billions annually, meaning voluntary country contributions and the private sector will be the most probably sources of finance.

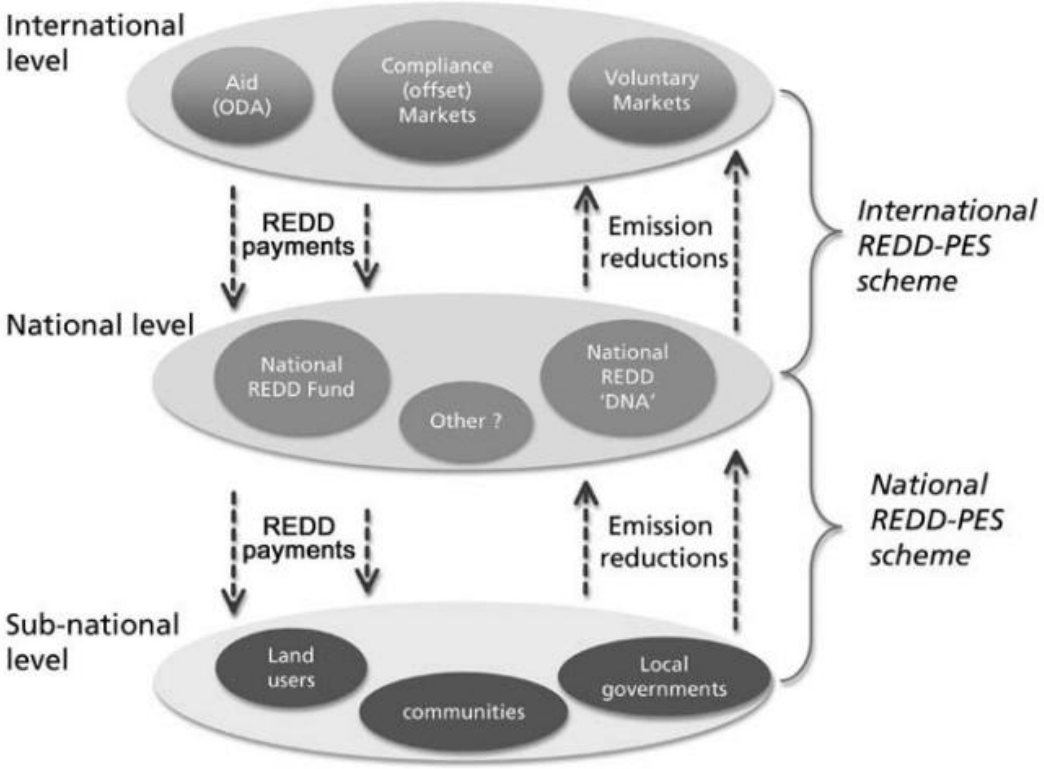

Figure 14 National or International REDD schemes (source: Angelsen and Wertz-Kanounnikoff, 2008).

Political will at the local, national and international level is required for an effective REDD programme (Malhi et al., 2008), but even a domestic agreement on reducing emissions has proven to be a challenge (Phelps et al., 2011) and a global agreement is far from easy. Political reasons complicate the negotiations and for this reason a carbon market for deforestation was rejected for the Kyoto protocol (Laurance, 2006). Countries like Brazil fear they might lose their sovereignty, while others feel it offers developing countries the opportunity to just buy their way out (Laurance, et al., 2002).On the other hand, while international negotiations have so far failed to put a halt to carbon emissions, these failings have not halted the growth of carbon trading (Maslin & Scott, 2011). Even if REDD would not be implemented in a global Kyoto type agreement, such programmes will still be essential for addressing climate change (Springate-Baginsky & Wollenberg, 2010). Even if the wish for a global agreement comes true, multi-level governance and responsibility is still a necessity (Maslin & Scott, 2011; Corbera et al., 2010).

5.6.1 Top-Down or Bottom-Up

Assuming an international agreement will come, this still leaves the question whether it should come before REDD can be implemented. As technical solutions involve politics and trade-offs,

experimentation might be vital to manage different expectations (Wertz-Kanounnikoff, 2010). A bottom-up approach suggests implementing projects before an international agreement is reached, which provides the possibility of taking local needs into account (Blom et al., 2010). These projects can influence the dynamics in the global negotiations (Maslin & Scott, 2011). Caution is necessary however, as demonstration projects are not always representative for wider reality (Sunderlin et al., 2010), nor will they scale up without effort to a national REDD programme (Seymour & Angelsen, 2009). It is likely that policy will continue to lag behind project development due to political challenges (Seymour & Angelsen, 2009). Nonetheless, pilots can be used to provide lessons for national policy and issues such as CFM can move ahead while politically heavy debates rage on (Seymour & Angelsen, 2009). Local efforts also offer a safety net in case higher level negotiations fail (Maslin & Scott, 2011). Some fear this will lead to bureaucracy as it creates a system with overlap, but a perfect top-down system of governance is unlikely to ever succeed (Maslin & Scott, 2011).

5.6.2 Understanding each other

Different groups are likely to differ in the ways they value REDD and forests (Forsyth, 2009). Different interests can lead to the failure of REDD unless a common understanding of what is desirable is reached (Forsyth, 2009; Corbera et al., 2010). Such a balance can benefit the potential social and ecological co-benefits of REDD (Forsyth, 2009). Key to reaching a common understanding is trust (Forsyth, 2009). If REDD is seen as imposed from above it might damage trust. It may even be necessary to trade-off some efficiency in the short term for equity, resulting in a longer term agreement (Forsyth, 2009). However, whether such common understanding will arise soon is questionable, as different stakeholders seem to mistrust each other and are quick to criticize. REDD projects are receiving critique before they have properly started (Hoyle, 2011; Bosquet, 2011). Caplow and colleagues conducted an analysis in 2011 on popular press reporting on REDD projects and came to the conclusion that most made generalized comments on the basis of limited and speculative data. They feared the press would properly fulfil its role as a provider of critical analysis (Caplow et al, 2011). While REDD has potential to engage stakeholders all over the world (Stickler, et al., 2009), such mistrust and misunderstanding might damage this. A transparent and inclusive stakeholder process is needed to resolve conflicts and create a legitimate shared REDD vision (Seymour & Angelsen, 2009).

5.7 The limits of REDD

REDD is indeed a potential solution for the issue of deforestation, but it is important to understand what REDD can and cannot do. The effectiveness of the REDD programme depends on the ability of countries to address the underlying drivers of deforestation (Corbera et al, 2010; Venter & Pin Koh, 2011). An important underlying driver is governance, as has been discussed before, and REDD will have to be paired with long term reform of weak governance to be successful (Corbera et al., 2010). REDD aims to increase the value of standing forests, but this does not necessarily tackle the issue of increasing agricultural demand driving deforestation (DeFries et al., 2010; Simoes et al., 2011). REDD needs to be paired with incentives to increase agricultural productivity sustainably, such as stimulating production on already cleared land (DeFries et al., 2010). If such incentives are directly transferred to landowners, there is a risk of elites capturing the benefits while smallholders are excluded (Simoes et al., 2011). This possibility is also grounds for heavy criticism on REDD, as the drivers for deforestation are mining, logging and agricultural industry, who will be rewarded under REDD (Gilbertson & Reyes, 2009). The other option is profound change in our collective and individual consumption pattern (Karsenty, 2008; Clement & Clement, 2008). Promoting and

developing different types of sustainable forest use such as ecotourism and non-timber products could also be a successful endeavour to be combined with REDD, as it improves the capacity of local people to generate a livelihood without harming the forest (Ghazoul et al., 2010).

Separate measures such as tackling weak governance could slow down deforestation, but as Gullison et al. (2007) and Laurance et al. (2006) aptly state, these measures are unlikely to be implemented on a large scale without financial incentives, which may only be feasible in a comprehensive framework such as carbon markets. So far the international community has shown willingness to pay while developing countries have demonstrated a strong will to tackle the issue (Seymour & Angelsen, 2009). The amount of financing could tip the scale in the favour of sustainable forest management (Seymour & Angelsen, 2009). In addition, what sets REDD apart is the array of different organisation that are watching REDD closely. Private investors do not want to hazard damaging their reputation. This outside scrutiny could prevent mismanagement of REDD and increase the chance of success (Seymour & Angelsen, 2009). It is vital not to create unrealistic expectations of REDD, but if it does overcome the challenges it faces, it offers a history opportunity to halt deforestation and mitigate climate change (Ebeling & Yasué, 2008; Blom et al, 2010).

5.8 Conclusion

There are still a lot of areas in which consensus has not been reached yet. Both funds and a market-approach have their benefits. Funds are better at tackling underlying drivers, while markets have the opportunity of larger flows of financing. Most likely REDD will be financed through both, starting with mostly funds, transitioning to mostly market-based. As for the scale at which credits will be awarded, a nested approach combining the benefits of a sub-national and national approach is most likely. It offers countries the opportunity to start at any scale as it is flexible and realistic in the short run. Flows of internationally awarded credits will flow to both the national level to stimulate wider policies and prevent leakage, while it also ensures that part of the benefits flow to the local level.

What objectives REDD has is one of the most heated debates. REDD has the potential to both hurt and benefit local livelihoods and biodiversity. The discussion is split in two parties. On the one side there are those that insist social and ecological co-benefits are a requirement for REDD to be implemented at all. The other side sees hurting the overall effectiveness in favour of equity as an injustice. Even though it is likely that investors are willing to pay more for REDD including co-benefits and one ecosystem provide the whole package, it does add complications to an already difficult negotiation.

One of the key concerns regarding REDD is at the same time also a potential benefit. Similar to any commons management issue, governance and land tenure play a key role in depletion of the resource. Many potential REDD countries have weak governance, which is partly why deforestation occurs in the first place. Instead of waiting with REDD until more solid governance is in place, REDD should be used to achieve better governance. This is best to happen in the starting stage with financing mostly from funds, as it is also true that without paying attention to this aspect, REDD is more likely to do harm than good. Secure tenure is also necessary for community involvement, one of the potential co-benefits of REDD. Not only is community involvement the just thing to do, as has been proven in commons literature, it can also be very cost effective. However, community involvement alone is not sufficient. Governments are needed to back up the tenure system and to tackle larger underlying drivers of deforestation. This means that the best potential solution is similar

to the trend uncovered in the commons literature: collaboration and co-management. The best chance of success is when the benefits of both national and local management are combined.

Most REDD literature is written from the assumption that REDD will be an international agreement, but a national level is also a possibility. An international agreement would strengthen the market, but due to all the politics involved, especially with all the competing objectives, such an international agreement is not likely to be made soon. A bottom-up approach testing different aspects could ensure that progress continues and clarify some of the uncertainties. However, one of the major requirements for any agreement to be formed is a common understanding between different parties. In many of the aspects just discussed, different groups appear to be at opposite sides. One of the reasons why REDD may succeed unlike its predecessors is due to close scrutiny from outside parties, but some of these parties are also quick to judge, which is not aiding the building of trust.

One of the most important things to realize is that REDD will not solve all the world's problems. Increasing agricultural demand will have to be tackled through increased and sustainable agricultural productivity and a change in our consumption behaviour. Some argue that separate measures will already address deforestation, such as stronger governance, and simply creating value for standing forests will not help. However, a large framework of financial incentives is likely to be necessary to address these separate issues at a large scale. Expectations and opinions differ wildly between different groups and trust and understanding seem to not always be present between groups. As understanding plays an important role in any issue (Adams et al., 2003), this thesis will focus on how different stakeholder groups view the important aspects just discussed. The theory on stakeholders will be discussed in the next chapter. REDD is no silver bullet, but it holds potential.

6. The Stakeholders

To reach an agreement, different stakeholders need to share a common vision of what REDD will accomplish. Both interests and understanding play an important role. This chapter first outlines some stakeholder theory. It then continues with the stakeholders relevant for the REDD programme, how they link to the causes of deforestation as described earlier and how the different interests could be aligned. It also includes theory on issue linkage, which is a tool for stimulating an agreement and could play a role in the REDD debate, as many different objectives for REDD are discussed. The chapter concludes how issue linkage plays a role in bringing the stakeholders together in REDD.

6.1The Three Spheres

The term stakeholder was coined by Freeman, meaning any group or individual which can affect or is affected by an organization's objectives (Freeman, 1984). Currently a stakeholder is seen as a group or individual with an interest or concern in anything (Oxford Dictionary, 2010). Stakeholders can be divided into three different spheres: State, Market and Civil society (Van Tulder & Van der Zwart, 2006). The market sphere contributes to society through converting inputs into outputs, 'State' provides a legal framework and civil society is formed by the social relations of citizens that structure society (Van Tulder & Van der Zwart, 2006). Each sphere has their own primary responsibilities, but some responsibilities lie at the interface of the spheres (Van Tulder & Meijs, 2011). An issue of commons management is when all three spheres clash and responsibilities are difficult to assign (Van Tulder & Van der Zwart, 2006). A solution needs to solve the tensions between all three areas. Figure 15 shows a graphical overview of the three spheres and some of their responsibilities.

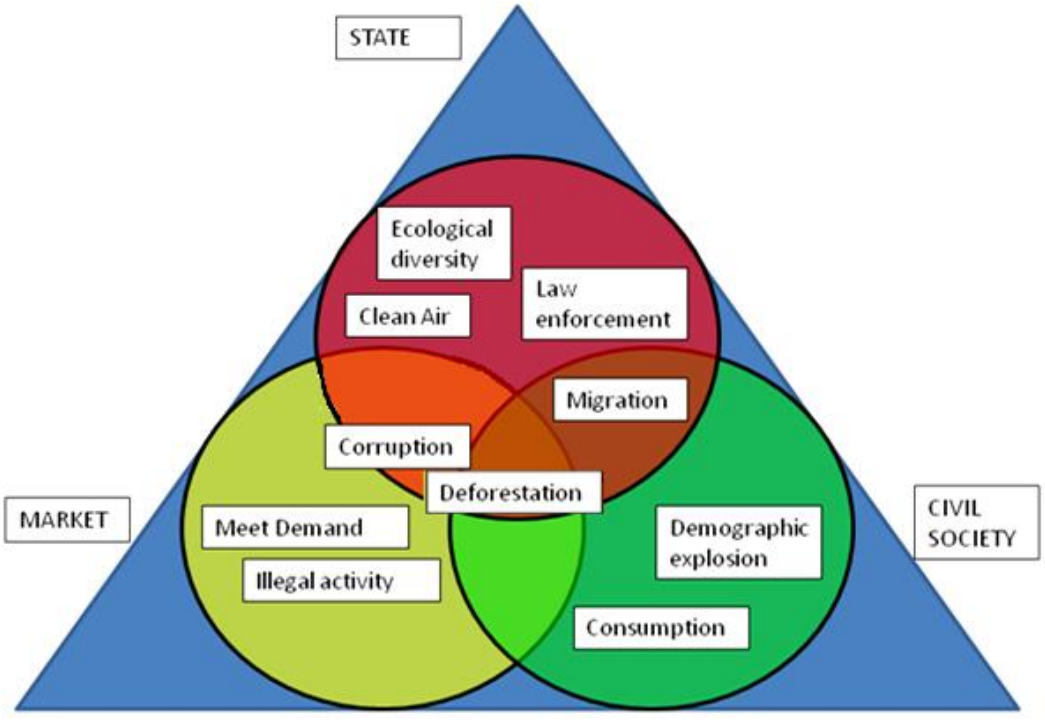

Figure 15 The three stakeholder spheres (adapted from van Tulder and Meijs, 2011)

6.2 The stakeholders in REDD

The three spheres each contain actors relevant to REDD. An overview of important stakeholders can be found in table 4, but it is by no means all inclusive. The sphere of state contains governmental

agencies on all levels, from international to municipal. Governments are involved in current REDD projects, but the majority of their involvement is found in preparing for REDD. Almost half of the current REDD readiness activities are conducted by government (Cerbu et al., 2010). The market sphere includes companies that contribute to deforestation by buying or producing goods and services related to deforestation, such as those involved in the agro industry and logging. It also contains companies that want to invest in REDD and buy credits. All these companies can be large multinational enterprises or local businesses. In addition comes the business related to producing the REDD credits and the traders on the carbon market. More than a quarter of all involvement in REDD projects comes from private companies (Cerbu et al., 2010). NGO's play an important role in the sphere of civil society, both those campaigning for issues such as indigenous rights as those involved in projects. Also very important are the local communities and indigenous peoples. However, Cerbu et al. (2010) show that so far, these are hardly involved, with only 1% of the involvement in projects and none in REDD readiness activities. Hence local communities and indigenous peoples are stakeholders that are influenced tremendously by the decisions made on REDD, but with hardly any power. Other players are universities and research institutions. They make up roughly 8% of the total involvement in both REDD projects and REDD readiness. The media reports on the developments that are made. Last but not least, the global population is also a key stakeholder. Not only because it suffers the effects of global warming, but also by stimulating deforestation through consumption.

Sphere	Stakeholders
State	International Government agencies such as UNREDD and the UNFCCC National Governments State Governments Municipalities
Market	Businesses buying goods related to deforestation Businesses investing in REDD Businesses producing goods related to deforestation Carbon Traders Businesses supplying REDD credits
Civil Society	National and International NGO's Local communities and Indigenous peoples Universities and Research Institutions Media Global Population

Table 4 The different stakeholders of REDD

6.3 Duties, interests and trade-offs

Each stakeholder has its own duties and interests, and sometimes these result in trade-offs. These are discussed by sphere in the following paragraphs.

6.3.1 State

Governments have the responsibility to provide governance by setting and enforcing regulations and standards (Van Tulder & Van der Zwart, 2006). In the current economical system that externalizes the value of ecosystems, the benefits of preserving forests are global, while the benefits of economic activity are national (Bonnie et al., 2000). In the international arena, countries face the question of how far to intervene with developing country policy. For example, countries have received criticism for having cut down their own forests for economic prosperity, while hypocritically intervening in Brazilian governmental policy (Acheson, 2000).

National governments have the role to look after the well-being of their populations and ensure the providence of things such as clean air and welfare (Van Tulder & Meijs, 2011). The government's position is one of a clear trade-off; efficiency in the form of economic progress versus equity in terms of environmental preservation. Short-sightedness and corruption (Hecht, 1985) play a role in possibly speeding up deforestation since economic growth is an immediate benefit while environmental change is a long term consequence. Government officials might be attracted by short term results, allowing forests to be chopped down and increasing GDP; while leaving the burden of deforestation on the shoulders of future government. The more local the government, the more skewed the trade-off between economic growth and environmental preservation becomes, as seen in figure 16. This influences municipal decision making as they have the same responsibilities as national governments. Governments are also influenced by their election cycles and the power of strong elites, causing them to not always act in favour of long-term interests or the interests of the wider society.

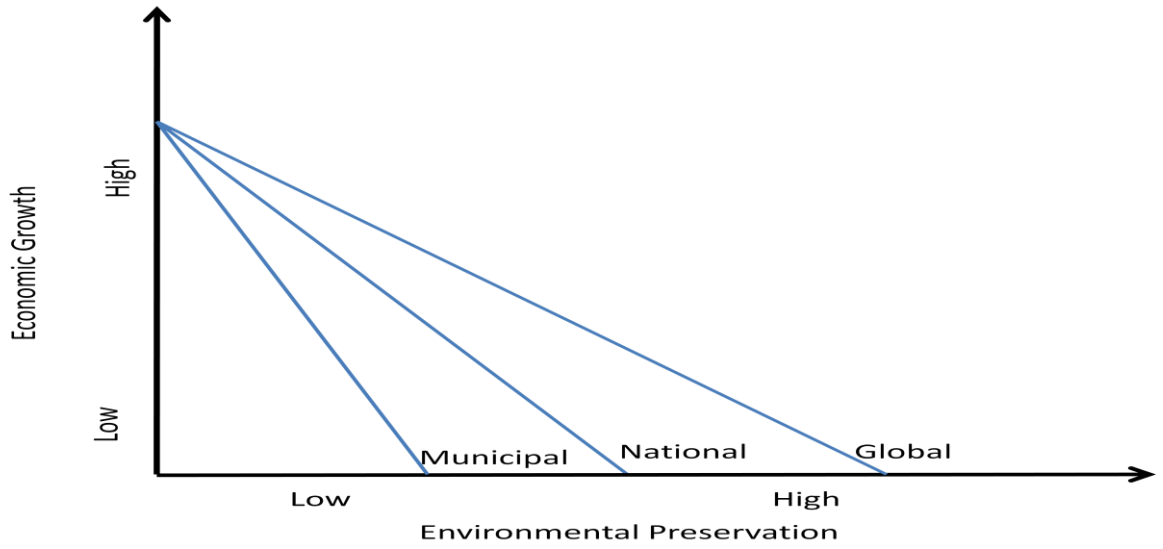

Figure 16. The Trade-off of Forest Preservation

6.3.2 Civil Society

The consequences of deforestation for the global civil society are endangerment of meeting future needs. Besides its contribution to global warming, deforestation disturbs the forest water cycle, causes soil degradation and increases incidence of desertification and erosion (Sioli, 1985), diminishing the capacity of productive lands (Houghton, 1990).

The primary responsibilities of civil society involve migration and the growth of the demographic population. The global population is also responsible for its consumption, including making informed decisions on what kind of products to use (Van Tulder & Van der Zwart, 2006). This impacts the issue, as demand for unsustainable products spurs industries to deforest. International and national NGO's have the duty to act in the name of civil society and give them a voice in the bargaining of market and state over the forest (Van Tulder & Van der Zwart, 2006). They also face the responsibility of bringing issues to the attention of the public, which also counts for the media. Local communities and indigenous peoples are responsible for the way they live in the forest boundaries and their interests are to live there in peace. They can face the trade-off between providing their own livelihoods and not felling trees. Together with NGO's, they also face a serious trade-off between personal safety and effective actions when advocating against deforestation. For example, in Brazil

alone 1,237 activists have been killed in the past thirty years with few convictions of the guilty (Foley, 2007). Famous examples of murdered activists are the rubber tapper Chico Mendes and the American nun Sister Dorothy Stang, but many more have died without becoming media luminaries.

6.3.3 Market

The agro industry faces increasing local and international demand for cattle and agricultural products. Farms face the trade-off between economic expansion and not deforesting further. Without incentives to keep the forest standing, large scale farms have their interests skewed towards economic expansion.

International companies such as Nike, Ikea and Walmart have been accused of causing deforestation due to their sourcing of materials such as paper, wood and leather in order to produce their products (Coates, 2010; The Huffington Post, 2009; Karlsson, 2012). Providing their consumers with the demand for high quality and affordable prices is their main responsibility and interest. These companies face the trade-off of buying cheap and high quality resources against the possibility of being caught using unsustainable resources and damaging their reputation. Some multinationals have started to develop their supply chain in a more sustainable way (Coates, 2010).

Companies buying carbon credits and investing in REDD can be doing so because of legal obligation, but also because they want to reduce corporate risk and enhance corporate image (Dargusch et al., 2010). In this they face the trade-off between the cheapest carbon off-set and those with added other benefits. Companies producing REDD credits could do so for profit or ethical reasons.

6.3.4 The link to causes

The drivers of deforestation are closely linked to the actions of the different stakeholders. Of the proximate causes, agricultural expansion and wood extraction are performed by both business and local communities for their livelihoods. The development of Infrastructure on the other hand is often done by government agencies.

When looking at the underlying drivers, the causes in the social area are all tightly linked to civil society. The global population is responsible for population growth, although this factor is found not to impact the rate of forest clearance immensely. It is up to people to decide where they settle, although this is also influenced by government policy and both rural and urban population stimulate deforestation. However, the positive social influence civil society can have is by creating a culture that demands environmental sustainability. Markets pursuing profits spur forest loss and civil society demanding goods and services are mainly responsible for the productivity in these markets. A key driver of deforestation is governmental policy in forms such as agricultural subsidies. Governmental policy aiming to stimulate the economic well-being, especially if it is short-term focussed, can spur the felling of trees. Finally, one other main reason for deforestation, of which the importance is stressed in common resource management literature, is insecure property regimes. De juro government control and de facto open access as well as vague property rights can be seen as a failure of governments to fulfil their duty of setting a regulatory framework and enforcing it. Common resource theory also shows that when governments align more with larger business interests than that of farmers, they can interfere with self-governance structures and harm the interests of their populations. However, when the state does aim to benefit wider society, they can still cause disturbance with their well intended interference. The best approach to tackle this issue seems to be co-management between state and local communities.

6.3.5 The Overall trade-off

The main trade-off appears to be between economic development and the environmental benefits of an intact forest. This trade-off becomes skewed towards preferring economic development the more local you get, as well as when short-term benefits are preferred over long-term benefits. Governments implement policies to benefit the economic well-being of their populations or fail to enforce environmental regulation due to lack of resources. The market aims to pursue profits and the global population with their increasing demand faces the trade-off between sustainable and affordable. Local populations might also have to cut down forests to sustain their livelihoods.

But does it really have to be a trade-off? Our current markets indeed do not seem to value the benefits of ecosystems, but internalizing them might solve this conundrum. When standing forests are valuable, wider society will benefit economically and environmentally. Local people will be able to provide their livelihoods without degrading the forest they live in. In addition, markets will be more stimulated to leave the forest standing. Even without internalizing the benefits of ecosystem values, agricultural production can be done in sustainable ways that do not harm forests and are profitable (Allen & Barnes, 1985). However, the financial push of internalization might be necessary, as sustainable forestry pays, but unsustainable forestry practices pay more (Pearce, 2001b). REDD could offer this financial push. However, even if the agro industry becomes more sustainable, the increased pressure of demand that needs to be met remains. To solve this trade-off, a financial push must be paired with less consumption or improved productivity.

6.4 Alignment

In order for REDD to become a large scale financial framework internalizing the value of a forest, an agreement must be reached. This means alignment of ideas on topics such as funding, but perhaps most importantly what goals REDD will actually have. The alignment of interests and duties mentioned above should theoretically be possible, but are not automatically reached by creating a carbon market for climate mitigation. Examples of issues are local populations that are evicted for conservation purposes and corruption that prevents a government from fulfilling its duties. REDD could potentially harm and benefit several aspects, which are all included in the negotiations. Theoretically, combining multiple objectives could lead to more political acceptance, but it might also overcomplicate the negotiations. Therefore the next section delves deeper into 'issue linkage' theory, a mechanism that could potentially enrol a larger set of actors by clustering different issues.

6.4.1 Issue Linkage

Most of the theory on issue linkage concerns international crisis negotiations. The basic concept is to combine different issues and thus different negotiations (Axelrod & Keohane, 1985; Haas, 1980). It can improve the chances of cooperation, as different parties benefitting from different issues can reach a stable and favourable coalition as some parties gain on one issue, while others gain on other matters (Morgan, 1990; Kemfert, 2004; McGinnis, 1986; Miller & Dolsak, 2007). A necessity for success is that different parties have different priorities across the issues (Morgan, 1990). Issue linkage can be done consciously, or it is unavoidable due to issues being so interdependent that the outcomes of each influence the outcome of all (McGinnis, 1986). In the case of the latter, an issue linkage is substantive and offers the opportunity of a holistic solution (Haas, 1980). However, issue linkage is by no means a guarantee for success (Axelrod & Keohane, 1985; Morgan, 1990). Failure of a linkage occurs when a party does not consider an exchange across issue, meaning the added issue does not create additional benefits to overcome an impasse or creates an impasse in itself (Morgan,

1990). Besides the challenge of finding complementary issues to link, all actors have to be convinced that agreeing on one issue is conditional for agreement on the other issues (Davis, 2004). An important influencing factor is the power of the different parties (Morgan, 1990) and a linkage will not success if those parties with power prefer things to stay the way they are (Haas, 1980).

6.4.1.1 Complexity & Understanding

Separated issues result in negotiations that are more manageable and easier to understand (Morgan, 1990; Haas, 1980). Linking issues is limited by the increased complexity brought by adding issues, as costs and benefits are becoming harder to establish (Tollison & Willett, 1979). Issues that are well understood by negotiators are more suitable for linking in order to promote agreements (Tollison & Willett, 1979; Haas, 1980). However, issue linkage is sometimes done without a sound understanding of the causes and effects of linkage (Haas, 1980). Another issue is that such uncertainty about cause and effect leads to the inability to reach consensus over what goal should go before the other in terms of importance (Haas, 1980).

Perception of different actors is also a crucial factor in linking issues (Axelrod & Keohane, 1985; Miller & Dolsak, 2007). Decision making is influenced immensely by the way different parties think about the issue (Axelrod & Keohane, 1985). Miller and Dolsak (2007) request scholars to look beyond material interest in international negotiations, as politicians may defend cultural issues that are not economically or politically founded.

Important to note is that in negotiations, a complete agreement of all parties is implausible. It is more realistic that some parties will form smaller and stable coalitions (Kemfert, 2004).

6.5 Conclusion

Different stakeholders have different duties and interests and all face their own trade-offs. Their actions are also invariably linked to the drivers of deforestation. The main trade-off leading to deforestation is the choice of economic welfare over environmental benefits, although this welfare may be only for those in power and not wider society. This trade-off can be partially overcome by internalizing the value of forests into our market system and by tackling the demand issue through less consumption or increased agricultural productivity. For such an internalization to take place in the form of REDD, an agreement between different stakeholders is necessary. A tool to achieve political consensus is issue linkage, meaning the combining of different objectives. This tool is also being used in the discussion on REDD, as combining objectives of biodiversity, climate mitigation, development and improving governance is a major aspect of debate. Due to the strong interdependence of the issues, it appears to be a substantive linkage, in which a holistic solution is possible. For a linkage to be a success, it is best that all parties involved see it as an all or nothing game; agreement on one issue is invariably connected to agreeing on the other. This is the case for some parties, as they see the combination of all objectives as the only way for REDD to become a legitimate option. However, not all parties agree, as they feel trading off equity for efficiency is a fallacy, thus forming a group that can let the linkage fail by not considering it as an exchange across issues. An added issue is that combining all goals leads to more complexity, as the effect of the issues on one another are uncertain, as REDD can potentially harm and benefit all aspects. Once again, analyzing the understanding of the different parties proves to be essential in issue linkage. The next chapter summarizes all the literature findings, resulting in the overall framework of this research and explanations of why research into different stakeholder objectives is vital.

7. Conclusion Literature Review

Commons literature has shown that community management is a viable option of common resource management. However, property regimes alone do not guarantee success, as it depends on the overarching authority to enforce it. Collaboration and co-management were identified as a good possible solution, which has also been identified as a trend. The other trends are the lack of external factors in commons research, commons becoming increasingly global, the potential of market incentives and the importance of stakeholder views. In the case of the last matter, not only do interests matter, understanding also plays a significant role.

In order to judge the effectiveness of any solution, the causes of the problem have to be known. Bridging the gap between the silos of commons and deforestation literature, the most important ones can be found in table 5.

Type of Driver	
Proximate Causes	Wood Extraction Agricultural Expansion Infrastructure
Underlying Drivers	Culture Change (Environmental Movement) Urban Demand Agricultural Markets Poverty and Off-farm Employment Governmental Subsidies Property Regimes Land Tenure Security

Table 5 Overview of the most important causes based on commons and deforestation literature

Market incentives were pointed out as a solution with potential, as current command and control measures are not sufficient. Market incentives attempt to internalize the values of ecosystems, as our current market system does not value them right now, leading to resource depletion. The benefits are that market incentives are cost effective and offer the opportunity to combine multiple goals. However, the opposition fears it will commoditize nature and threaten the social capital of communities. For a market incentive scheme to be a success the rules need to be flexible and solid monitoring and enforcing is necessary. Property rights are also a key issue as people at the local level participating in these projects need to be able to control their lands. For this last issue, as established before, an overarching authority is necessary. Therefore the question might not be whether to choose market incentives or command and control, but how to combine the best of both. Once again, collaboration seems to be the best option. Even if the system is theoretically perfect, it also needs to be politically feasible. A way to ensure this is to combine multiple benefits, although this does lead to potential trade-offs.

REDD is a promising solution for deforestation, but it is not necessarily a market structure, only when it is linked to an obligatory or voluntary market, which is likely to be the case. Nonetheless, REDD will not only be a market incentive scheme, as wider policy changes also fall under its umbrella.

Analyzing the literature on REDD shows there are a lot of different viewpoints and definitions. Aspects that still have to be further developed are sources of funding, the scale of accounting and crediting and a heated debate on the combination of multiple objectives and its trade-offs. On the

one hand it potentially attracts more actors, on the other hand, it complicates the discussion. An important issue for REDD similar to commons and market incentive literature is monitoring, enforcement and land tenure. Governance is also a large issue, as it is generally weak in countries that would likely implement REDD, but rather than postponing REDD until that issue is solved, people argue REDD should be used to start developing stronger governance. As for the matter of implementation, collaboration seems to be the best option once again, by combining local knowledge with a larger national strength to aid in enforcement of land tenure and tackling wider drivers of deforestation. This would also be an opportunity to not only include local communities for ethical reasons, but also for effectiveness. However, an agreement must be reached and currently one at an international level seems to be out of reach, not only due to differing interests, but also understanding. Due to the relative newness of the programme, a lot of unclarity remains and the media are quick to criticize.

Stakeholder views have been identified as an important trend in the commons literature, market incentives are made or broken based on political acceptance and for REDD, many different stakeholders need to come to a shared vision in order to keep the programme developing further. Therefore this thesis investigates how stakeholders from the spheres of market, civil society and state perceive the major aspects identified in the REDD literature. A major point is the combination of different goals, as this is a crucial debate in REDD. In theory it is also a possible tool for gaining political acceptance, but it might also hinder REDD to achieve its goals due to potential trade-offs.

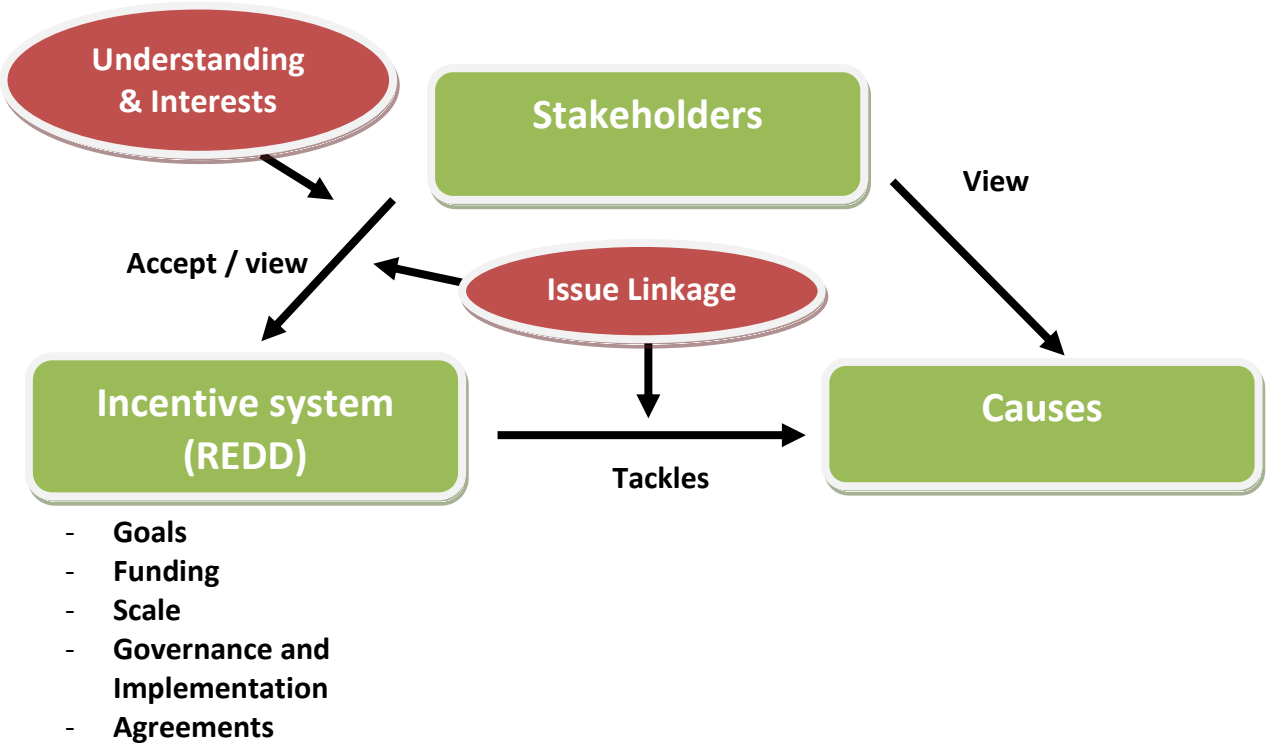

Figure 17. Model of the Research Paper

8. Methodology

8.1 Unit of analysis and the case study

This chapter outlines the methods used to create a multi-perspective picture of REDD.

The overarching unit of analysis is the management common resources as resource depletion is still rampant today. The next level of analysis is the forest commons in specific. This unit of analysis is relevant as we are still facing rapid deforestation with severe consequences on our climate and livelihoods. The case studied within this unit of analysis is the REDD programme. A case as defined by Yin is "An empirical inquiry about a contemporary phenomenon (e.g., a "case"), set within its real-world context" (Yin, 2009, p.18). Case studies are a useful method to find out the 'why' or 'how' of a phenomenon and when focussing on contemporary events (Cosmos Corporation as used by Yin, 2003). This case is relevant to the unit of analysis as REDD is a promising solution to bring deforestation to a halt and in turn reduce the balance of greenhouse gasses in the atmosphere. Multiple levels of analysis are embedded within REDD project as a unit; the perspectives of the three major stakeholder spheres of government, market and society on different aspects of the REDD programme are analyzed.

8.2 Methods

8.2.1 Stakeholder Perspectives

The common resource literature identified the characteristics, the interests of and the conflicts between all the different parties involved as a key aspect of commons management that has been understudied so far. The relevant stakeholders in the matter of deforestation have been grouped by the three major spheres of governments, society and market. The data collection is done by means of document analysis and expert interviews. Over fifty organisations and experts from all three spheres were contacted via mail with the request for an interview, and in case this was not possible, to fill out an open questionnaire. The list was formed by the organisations I came across during my research, as well as recommendations by people interviewed. Eight people were interviewed in person or over Skype and eight questionnaires were filled out. The total list of people contacted, the questionnaire, the e-mail and the bibliographies of the experts who answered can be found in appendix F.

The documents analyzed were retrieved from the organisations on the contact list, as well as documents recommended by the contacted experts. They include websites, articles, reports and videos. An overview can be found in appendix E.

The topics of questioning were based on the literature review. An overview can be found in Appendix D. The list is an interview guide and not all inclusive, as the interviews were semi-structured. The benefits of such an interview style are that it allows the experts the freedom to articulate their opinions on their own terms, while it provides more comparable data than a completely unstructured interview (Cohen & Crabtree, 2006). The questions were kept broad on purpose to facilitate the generation of a general overview.

The resulting data from the document analysis and the interviews are coded to reach a picture of the current status of the REDD project as seen by all different parties regarding some of the most debated aspects concerning the REDD project. After the first draft is finished, each participating expert was sent a copy, including a copy of the transcript of their interview, to enable them to give

comments. The coding tables and raw data are not included in this thesis but can be requested from the author.

All the information gathered will allow conclusions to be drawn on the perception of stakeholders on the ability of REDD to address the causes and stakeholder conflicts as identified by the literature. Most importantly, it will also enable conclusion to be drawn on how different stakeholders perceive the issue and REDD as a solution and whether there are major differences between them. The role of issue linkage in the acceptance of stakeholders can also be analyzed.

8.3 Validity and reliability

This section outlines the steps taken to ensure validity and reliability, as the quality of research depends on these aspects.

8.3.1 Construct Validity

This test shows whether the measure correctly identifies the concepts that are studied (Phillips et al., 1991). Case study research is often criticized for being too subjective (Yin, 2003). This research includes multiple steps to overcome this issue. First of all triangulation will be used, meaning data from multiple sources and multiple perspectives are used. Furthermore, the collected data from the interviews will be reviewed by the participants. Finally, a chain of evidence will be established, meaning relationships between research questions, research procedures, raw data, and results will be such that any reasonable person will logically arrive to similar conclusions.

8.3.2 Internal Validity

Internal validity concerns whether the research can reliably draw conclusions on causal relationships, excluding the possibility of outside variables actually causing the phenomenon. This test mainly concerns data analysis. For stronger internal validity, alternative explanations need to be considered.

8.3.3 External Validity

This aspect concerns the ability to generalize the findings to others in the same domain. As is understandable, this is difficult for case study research as each case is ingrained in its real-world context which might be unique. To increase the ability to do this, clear replication logic will be used for the case study so this research can be repeated for other solutions for forest commons management.

8.3.4 Reliability

A reliable study can be easily repeated by other researchers with similar results as an outcome. Therefore a case study protocol will be created and every step of the research will be documented for possible scrutiny. Documentation can be requested from the author.

9. The Results

This chapter analyses the perspectives of a diverse set of stakeholders. It starts with which causes are believed to be the main drivers of deforestation, followed by what they define REDD to be and the potential REDD has. It then dives into finance, scale, the goals of REDD and issues of governance and implementation. Next are the opinions on reaching an agreement, as well as an analysis of how understanding influences stakeholder views. It ends with which step the parties believe should be taken next and a conclusion on the main differences between the different stakeholder spheres.

9.1 Causes

To form a complete picture of the understanding of different stakeholders, it is essential to know what they believe the main causes of deforestation to be. Their beliefs will influence whether they regard REDD as a promising solution.

Simone Lovera (2009) deemed ecological drivers in the form of climate change are the number one threat to forests and ecosystems (Lovera, 2009). Harko Koster (2012) from the WWF also names climate change translating into fires and droughts as one of the drivers. The other sources of data all discussed human drivers. Many people indicated it was difficult to indicate causes, as they differ tremendously per place (Skutsch, 2012; Kiss, 2012; Clabbers, 2012; Gribling, 2012).

One of the most frequently named causes is the expansion of commercial agriculture (Sommerauer, 2012; Clabbers, 2012; Skutsch, 2012; Koster, 2012). This includes industrial plantations for palm oil and soy (Gribling, 2012; Cozijnsen, 2012; Survival International, 2009). This driver is even said to be the biggest driver (Sommerauer, 2012; Global Justice Ecology, 2010; Whalen, 2012; FERN, 2012; SNV, 2012). Subsistence agriculture is also named. Poor people deforest to fulfil their needs and fight for their right for existence (Savenije, 2012), which is spurred by the marginalization of forest dependent communities and their displacement from their lands (IUCN, 2012; Bullock et al., 2009). However, others do not see it as the primary cause of deforestation (Skutsch, 2012) and as a driver that should not be focused on as it is difficult to prevent. The illegal and unsustainable harvesting of timber, is also mentioned (Koster, 2012), but many do not see it as the primary cause (Skutsch, 2012; Kelly, 2012; Cozijnsen, 2012; Gribling, 2012; Face the Future, 2012). Markus Sommerauer, a forestry sector advisor, argues that a quarter or a third of deforestation is the result of commercial timber extraction and logging for firewood (Sommerauer, 2012).

The factors mentioned above are all proximate drivers, but what really matters are the drivers behind them (Skutsch, 2012), which are largely outside of the forest (Savenije, 2012). These include urbanization (Clabbers, 2012), perverse subsidies (Lovera-Bilderbeek & Al Mahmud Titimur, 2012; Koster, 2012), companies that do not care (Horowitz, 2012), differences in power (Van Bodegom, 2012), poverty at a local level that leaves people with no choice (Kelly, 2012; Horowitz, 2012; Savenije, 2012) and unclear land tenure (Sommerauer, 2010; Ozinga, 2012; FERN, 2012). The latter links in with a lack of institutional capacity, weak governance and corruption (Sommerauer, 2010; Avoided Deforestation Partners, 2012; Ozinga, 2012; FERN, 2012; IUCN, 2012; Savenije, 2012). Other cited drivers are increased wood consumption (Clabbers, 2012) and increased demand for resources such as food and energy (Ozinga, 2012; FERN, 2012; UN-REDD, 2012; Van der Vlist, 2012). It is our way of consuming and producing that drives deforestation, therefore this issue is not primarily a

technical problem, but a socio-economic and political-institutional one (Savenije, 2012). Cutting forests is currently more profitable than conservation (Global Justice Ecology, 2010; UN-REDD, 2012; Van Bodegom, 2012; Savenije, 2012) and results in economic growth for the country (Sommerauer, 2012).

Edit Kiss (2012) stresses that the type of cause driving deforestation will also determine what REDD project you will be dealing with. Local subsistence farming or multinationals needing palm oil requires different approaches.

Scholar Margaret Skutsch (2012) argues that REDD has been focusing too much on deforestation, while degradation might be more effective to tackle. Degradation is caused by non-sustainable timber harvesting and other Non Timber Forest products that are overexploited in an area, mostly done by poor rural communities (Skutsch, 2012; Enright, 2012).

9.2 REDD's potential

This section deals with how different parties actually define REDD, whether they think it is a promising solution and which causes it tackles.

9.2.1 Definitions

REDD projects are targeted specifically at preventing deforestation (Het ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer , 2009). Other stakeholders are more specific and call REDD a financial mechanism to reward countries who can prove reductions in their deforestation rate, thus providing an incentive to improve their forest management (NCIV, 2012; Celestial Green Ventures, 2012; FERN, 2012; IUCN, 2008; UN-REDD, 2012). Some are even more particular and state the core idea is developed countries paying developing countries (Sommerauer, 2012; Verburg & Koenders, 2008; FERN, 2012; IUCN, 2008; Survival International, 2009; Sikking, Van der Vlist, & Koster, 2009). The WWF is of the opinion that it is not just countries that are rewarded, but also any individual, community or project (WWF, 2012).

REDD goes beyond deforestation and degradation, including conservation, sustainable forest management and enhancement of carbon stocks (Sommerauer, 2011; IUCN, 2012). It creates value for standing trees through a financial price put on carbon (Celestial Green Ventures, 2012; Sommerauer, 2011; UN-REDD, 2012; WWF, 2009).

One thing is clear, REDD projects can take many different shapes, from sustainable forest management and community projects, to concessions and a fence around the forest (Kiss, 2012) and there are several REDD proposals, ranging from voluntary to compulsory and from funds to markets (IUCN, 2008). There is not one REDD programme (Ozinga, 2012).

9.2.2 A promising solution?

UN-REDD (2012) sees REDD as a 'cutting-edge forestry initiative that aims at tipping the economic balance in favour of sustainable management of forests' and the WWF (2009) predicts it might be impossible to keep global temperature increase at a minimum without REDD. However, not everybody seems to agree. In a video made by Global Justice Ecology (2010), they state that REDD claims to create value for standing forests, but in reality it appears more to be about making money, while leading to false promises, land grabs, conflict and corruption. Friends of the Earth International (2008) also opposes the rewarding of those engaged in industrial agriculture while ignoring countries

and communities that have low deforestation rates. Survival International condemns any use of indigenous lands without their full, prior and informed consent, which according to them includes REDD (Survival International, 2012).

There are hopes REDD will change the current rate of forest loss and coherently tackle climate change, loss of biodiversity and fighting poverty (UN-REDD, 2012; Lovera, 2009). As long as cut trees are worth more than standing ones, preservation will be a tough battle according to Stephan Schwartzman from the Environmental Defence Fund. REDD is promising because it provides value for standing forests (Koster, 2012) and Blairo Maggi, former deforester, believes REDD could be even more profitable than soybeans (Perlroth, 2009). However, REDD's potential depends on the way it is shaped with regards to safeguards for the rights of indigenous peoples (Van der Vlist, 2012). Simone Lovera (2009) fears there might just be too many 'ifs' for REDD to be a good solution. According to Ciaran Kelly (2012), CEO of the REDD credit trading company Celestial Green Ventures, it is essential for REDD to be conducted in a business fashion, as local people are tired of being seen as charity cases.

There is also a group that rejects REDD in case it is used as an offset for emissions elsewhere, as it could decrease the stimulant to cut these emissions at the source (Ozinga, 2012; Van der Vlist, 2012; Bullock, Childs, & Picken, 2009; REDD Monitor et al., 2010), therefore governments should reject any REDD ofsetting plans (Bullock, Childs, & Picken, 2009).

The WWF (2012) however sees REDD as a very cost-effective way of reducing greenhouse emissions and a solution that could be started immediately if the drivers of deforestation are tackled strategically. Sommerauer (2012), Global Justice Ecology (2010) and Saskia Ozinga (2012) are of the opinion REDD is actually not a promising solution exactly because it does not target the causes of deforestation sufficiently.

9.2.3 The Drivers REDD Tackles

So which causes does REDD address? Potentially all (Van der Vlist, 2012) if adequate methodologies are put in place for measuring and monitoring the project benefits (Whalen, 2012).

Edit Kiss (2012) from Eneco is not fully convinced whether REDD can work for each type of driver. More local drivers are more likely to be adequately targeted by REDD, as local and indigenous communities will not move to another area once you provide a solution and they can provide their own living. A large logging company on the other hand, easily moves on to a new area. Others agree that it depends on the situation. REDD might never be able to compete with some industries such as palm oil, but some crops can be competed with today (Horowitz, 2012; Enright, 2012). REDD may be an extra push, an addition to potential income of the forest, but multiple reasons are needed to keep the forest standing (Savenije, 2012; Clabbers, 2012). Fons Gribling agrees that REDD is an extra motivation. All other goals and expectations are not goals of REDD itself, REDD is meant as a stimulant for governments to take a look at their policies. Herman Savenije (2012) however, believes the strategy of REDD should be to improve the enabling environments to make the forest more competitive with other land uses, so that forests are kept standing where they should.

9.3 Financing REDD

How REDD will be financed is one of the main discussion points (Verburg & Koenders, 2008). This section analyses stakeholder perspectives on obligatory and voluntary markets, including the

offsetting debate resulting from the proposal REDD will be financed through such market-mechanisms. It is followed by thoughts on a fund structure, a mix of sources and a possible transition of funding sources.

9.3.1Markets

Some countries have the impression that developed countries should pay developing countries to combat deforestation; however, this is no longer the viewpoint of many developed countries (Gribling, 2012). The current CO_2 market is a private market in which governments have a modest role, and REDD is likely to become similar, according to Fons Gribling (2012). It is clear that public funding alone will not be sufficient and additional private sector involvement is crucial (REDD+ Platform, 2011; Cozijnsen, 2012). Sachin Kapila from Shell (REDD+ Platform, 2011) and Edit Kiss from Eneco (2012) believe carbon markets are an effective and efficient way to stimulate private sector involvement at a larger scale. However, the existence of both the regulated market and the voluntary market is creating confusion (REDD+ Platform, 2011).

9.3.1.1 Voluntary and Regulatory Markets

The benefit of a voluntary market is that there is no obligation for the credits to be purchased. Therefore it requires more effort and transparency to create credits worthy of purchase (Kelly, 2012). However, the fact that credit purchase is not mandatory can also be the downfall of the voluntary markets, as Sachin Kapila from Shell states that the voluntary market provides too little demand (REDD+ Platform, 2011). The required reduction from a regulatory market will have a strong impact on the market, as a larger reduction means a larger market (Sikking, Van der Vlist, & Koster, 2009; REDD+ Platform, 2011). REDD should not become part of the CDM mechanism, as it has a bad track record regarding forests, although it should be a similar type of market, more tailored to REDD and including high targets or a cap to avoid market flooding (Kiss, 2012).

9.3.1.2 The Offsetting Debate

REDD is most likely to be at least partly financed through markets, and this fuels one of the most passionate debates surrounding REDD. A lot of NGO's see the carbon market as a system that allows industries in developed countries to continue polluting by using the carbon storage of trees (Global Justice Ecology, 2010; Lovera, 2009). In the anti-REDD video from Global Justice Ecology (2010), REDD is compared to losing weight by paying someone else to go on a diet. The two reports from Friends of the Earth (2008; 2009) state the rich countries continue polluting while requiring unfair reductions in developing countries, while both need to cut their emissions. FERN (2008) also adds that carbon trading is perverse as only countries that deforest are eligible for money and when REDD becomes a part of the Kyoto protocol, it will distort the incentive for long term investments in clean technology.

Kelly (2012) agrees reducing your carbon footprint with internal means should be done as much as possible. He strongly believes that companies do not pollute just because they can, they can see the logic of reducing their footprint. Edit Kiss (2012) also says that some NGO's immediately state that offsetting is bad because you need to mitigate, but such investments take quite some years. She does not see the harm to use REDD in the meantime, which according to Ciaran Kelly can be done due to corporate social responsibility or other reasons. Edit Kiss strongly stresses 'there is a difference between saying don't offset, or offset what you cannot mitigate or until you cannot mitigate'.

Another option is proposed in the 'Discussion Paper on REDD, finding an approach likely to succeed' published by IUCN and by Jos Cozijnsen, carbon market consultant. To prevent flooding the market

with cheap credits and taking away the incentives for clean energy, countries could voluntarily commit to a national obligatory baseline and only receive the credits for reduction beyond their own objective.

9.3.2 Funds

There are also numerous people that believe REDD can operate without offsetting, namely through funds (Skutsch, 2012), both public and private (Ozinga, 2012). In this way, REDD is additional to proposed emission cuts (Lovera, 2009). Although some very strong opponents, as published in the anti-REDD article collection 'NO REDD' (2010), state that even a REDD proposal based on funds for financing should be rejected, as there is always a danger of REDD becoming a component of carbon markets.

Public funds can be used for capacity building (Kiss, 2012), thereby reducing risks, and stimulating additional private sector investment (Representative of Shell, REDD+ Platform, 2011). Another benefit from funds is that investors are likely to demand that the money should benefit local communities (IUCN, 2008). However, developing countries have their doubts of how much money will flow from another international donor driven fund (IUCN, 2008). Another option would be to fill the fund with a tax on fossil fuels, resulting in a win-win as the tax in itself will stimulate emission reductions (Bullock, Childs, & Picken, 2009). The crisis has also caused especially public funding and subsidies to decrease, so people start focussing more on the carbon market, as this is running slowly, but it still exists (Cozijnsen, 2012).

9.3.3 Mixing and Transitions

Many parties appear to be in favour of mixing different sources of funding; international and national, markets and funds and public and private funding (Skutsch, 2012; Cozijnsen, 2012; Kiss, 2012; Verburg & Koenders, 2008; Gribling, 2012; Avoided Deforestation Partners, 2012; Whalen, 2012; IUCN, 2008). Governments do not have enough budgets to finance REDD (Kiss, 2012), especially due to the crisis (Clabbers, 2012; Van Bodegom, 2012; Cozijnsen, 2012).

This mix of sources might result in a transition, slowly evolving from a predominantly fund based structure to a market structure (Cozijnsen, 2012; Global Canopy Programme, 2009). This allows gaining experience with a market based approach and unwanted effects can be avoided (IUCN, 2008). Funds should be used to create the mechanisms, and credits can be traded on the markets (Koster, 2012). This also appears to be the intention of the Australia-Indonesia partnership, as Australia is aiding Indonesia in its development, so it can participate in international REDD carbon markets in the future (Australian Department of Climate Change , 2009).

Avoided Deforestation Partners are afraid that with the public and private sector combined, we still do not have enough funds to tackle this problem (2012). However, research done by the Global Forest Coalition has shown that addressing the underlying causes of forest loss does not require large financial investments, but the redirection of current financial flows supporting bio-energy, mining and other destructive endeavours (2012).

9.4 Scale

Another important issue is on what scale REDD will occur (Verburg & Koenders, 2008). This section analyses the different stakeholder opinions regarding the national and nested approach, as nobody strongly argued for a purely project based approach.

9.4.1 National Scale

The WWF states that REDD activities will occur at all levels, but national reference levels and monitoring are necessary to verify the reductions (Brickell, 2009). The majority of the countries at the UN Climate Treaty are in favour of a national system, mostly due to the prevention of leakage (Verburg & Koenders, 2008). Many agree that a national strategy is indeed vital to combat leakage (Van Bodegom, 2012; Gribling, 2012; Kiss, 2012; Bullock et al., 2009). Ciaran Kelly is of the opinion that leakage is a tricky topic. He wonders how leakage will be articulated and measured. He agrees the national reference level is a solution worth considering and what is happening at a national level cannot be ignored, but he believes projects will live or die on a local level. He also wonders where the responsibility will lie for such a leakage. Jos Cozijnsen states the national level can be used to form a buffer, which would solve the concern for responsibility. The issue of international leakage does still remain (Bullock et al., 2009). Fons Gribling hopes that once REDD is truly up and running, the money will be spend in a sensible way, but the fear a purely national REDD scheme might result in the money not reaching local actors is large and not without reason.

9.4.2 Nested Approaches

A nested approach would to some extend deal with the issue of money reaching local populations. Some parties argue for a nested approach (IUCN, 2008; Kiss, 2011; Whalen, 2012; Sommerauer, 2012), although it also appears that scale could apply to either implementation or monitoring and accrediting. Justin Whalen (2012) from NGO Face the Future argues each local site has their own stakeholders, challenges and needs and a nested approach allows project specific needs to be met. Markus Sommerauer (2012), a forest industry consultant, argues for top-down nested approach, starting at the national level. Others argue REDD will start with projects or pilots that are later integrated into a national mechanism (Gribling, 2012; Kiss, 2012). Adrian Enright (2012) from SNV believes all can co-exist. Private investors can invest in projects while there is still a national system. He does stress that considerations of nesting have to be thought of in an early stage, particularly in the case of MRV. Scholar Margaret Skutsch (2012) believes implementation will happen at all levels, the question is how they will be fitted together. Jeff Horowitz (2012) believes it will depend on the country, and Saskia Ozinga (2012) from FERN believes it depends on the overall aim REDD will have.

9.5 The Goals of REDD

Which goals REDD can actually achieve is heatedly debated in the REDD negotiations. This section looks into what parties consider to be the main goal of REDD, the other important objectives REDD has and the synergies, trade-offs and complexities which results from combing them.

9.5.1 The Main Goal

For some, the main goal is clearly in the name; reducing Emissions through reduction of deforestation and forest degradation (Clabbers, 2012; REDD+ Platform, 2011). Stabilizing CO_2 levels in the atmosphere is the main goal from a climate change point of view (Savenije, 2012; Bullock et al., 2009). Others see putting a halt to deforestation as the main goal (Kiss, 2012; REDD+ Platform, 2011; Van Bodegom, 2012) and through that mitigate climate change (Kiss, 2012; Koster, 2012). Harko Koster believes this should be achieved by 2020 in forests key for biodiversity, water regulation and people. The question is, how do you do that? (Van Bodegom, 2012). Some parties have an answer to this; implementation of sustainable forest management (Skutsch, 2012; IUCN, 2012), improving forest governance (Ozinga, 2012) or control of commercial timber (Skutsch, 2012). Markus Sommerauer (2012) mostly stresses that it should not be about conservation. A lot of people depend

on forests, and a better way would be to establish efficient land use and agricultural systems, both contributing to the national GDP and the preservation of biodiversity.

Others do not see the prevention of deforestation as the sole main goal, but also stress the empowerment of communities (Horowitz, 2012) and to protect forest-dependant peoples (Van der Vlist, 2012; Whalen, 2012). Ciaran Kelly (2012) sees carbon as a means to an end. It is where the funding comes from, but it is not what REDD projects are all about.

Fons Gribling (2012) from the Dutch Ministry of Foreign Affairs states the purpose of REDD is to stimulate countries to reduce deforestation because of the carbon trapped in the trees. All other objectives and expectations are not the objectives of REDD itself. It is merely a stimulant for governments to take a look at their policies. Harko Koster (2012) from the WWF also states REDD is a funding mechanism and not about the management of forests. Herman Savenije (2012) from knowledge institute Tropenbos however, believes carbon credits are not enough to prevent deforestation. A broader and integrated approach resulting in sustainable forest management is required to make a standing forest sufficiently financially attractive.

9.5.2 The Multiple Goals of REDD

According to Robert Zoellick, president of the World Bank, REDD enjoys global broad support, clearly because REDD offers a significant opportunity to achieve multiple goals (Global Justice Ecology, 2010). The WWF agrees that, if properly designed, REDD can have triple dividend in climate change, biodiversity and sustainable development (WWF, 2012). Alternatively, Friends of the Earth (2008) warns that it is uncertain these co-benefits will materialize and REDD could even potentially hurt all three aspects, especially when the definition of forests includes plantations. In short, REDD can present opportunities as well as risk for local livelihoods, biodiversity and climate. Implementing countries will need assistance and guidance to implement the UNFCCC safeguards (SNV, 2012).

9.5.2.1 Forest Dependent Communities

Local communities should be engaged in the REDD process and their rights should be respected (FERN, 2012; Avoided Deforestation Partners, 2012; IUCN, 2008; Verburg & Koenders, 2008; Anderson, 2011; Kelly, 2012). Some fear REDD will hurt the rights of forest peoples (Sikking, van der Vlist, & Koster, 2009). If indigenous rights are not respected, indigenous communities will oppose REDD (Survival International, 2009). Governments in general are not willing to sit down with indigenous peoples and respect their rights, therefore strong international standards are required (Sikking, van der Vlist, & Koster, 2009). The articles in 'NO REDD' (2010) argue that such safeguards are not there yet and the people who protect the forest are actually criminalised.

A main concern related to respecting local community rights is that they are being left out of the REDD discussions (Global Justice Ecology, 2010; Survival International, 2008). Ciaran Kelly (2012) believes the international community would never purposely cause harm to local communities, but it is difficult for the international negotiations to see local communities, as they are also complex in themselves. Edit Kiss (2012) states everybody is left out in the larger negotiations. NGO's and indigenous peoples themselves are lobbying and demonstrating (Kiss, 2012; Van Bodegom, 2012), so there is awareness (Kiss, 2012).

On the other hand, REDD offers the possibility of poverty reduction if benefits are devolved to local stakeholders (Verburg & Koenders, 2008; Sommerauer, 2012; Avoided Deforestation Partners, 2012; IUCN, 2008; IUCN, 2012; WWF, 2012). This made REDD more important in the eyes of smallholders (Simoes et al., 2011). Any legitimate REDD strategy must include guidelines and safeguards to ensure this benefit sharing with the local communities that maintain the forests (UN-REDD, 2012; Koster, 2012). However, Edit Kiss (2012) tells that some people are sceptical of REDD's potential to spurt community development. They argue development aid was not successful, so why should REDD be?

Besides affecting their livelihoods, REDD can also alter the social order, identity and culture of forest peoples, which also has to be taken into account in the REDD design (Anderson, 2011). Bas Clabbers (2012) on the other hand also stresses that REDD is not able to erase all inequality, although some might have that illusion.

9.5.2.2 Biodiversity and Ecosystem Services

Biodiversity perhaps has the most intensive link with halting deforestation (Clabbers, 2012) and it is a potential REDD co-benefit (IUCN, 2012; WWF, 2012). Forests also offer a wide range of other ecosystems services, varying per location, such as water regulation and soil protection (UN-REDD, 2012). Adrian Enright (2012) believes biodiversity is a crucial element of REDD and the safeguards established since the COP of 2010 in Cancun do not allow projects to harm biodiversity. The letter from the Dutch ministers Verburg and Koenders to the second chamber states that the REDD mechanism could provide an example for other markets for ecosystem services. The United Nations climate treaty focuses on greenhouse emissions, but the Dutch government is of the opinion that attention for biodiversity deserves attention within REDD (Verburg & Koenders, 2008). Jos Cozijnsen (2012), however, does not believe creating separate markets for biodiversity would work, it should be a part of any REDD project, which is usually the case.

9.5.2.3 Other Co-benefits

Besides benefits for local communities and the protection of ecosystem services, REDD offers the opportunity to:

- rationalize and legalise tenure of forests (Skutsch, 2012)
- improve governance (REDD+ Platform, 2011)
- spur sustainable agriculture (Horowitz, 2012)
- transfer sustainable forestry knowledge to developing countries (Whalen, 2012)
- promote the value of forest ecosystems in a holistic way (Whalen, 2012).

For those that saw providing rights and benefits to local communities as the main goal, contributing to climate change is seen as a co-benefit (Van der Vlist, 2012).

9.5.3 Synergy and Necessity

Initiatives battling deforestation are urgent, but a focus on carbon risks distraction from dealing with the actual drivers of deforestation (FERN, 2012). There are synergies. If you are protecting carbon through natural forests, biodiversity is also benefitted (Kelly, 2012) and deforestation rates are much lower in indigenous reserves (Lovera, 2009). If you listen to local communities, they are more than capable of coming up with ideas for managing the forest (Kelly, 2012). When REDD is implemented, research for such synergies should be stimulated (Verburg & Koenders, 2008).

Combining different objectives is also a necessity. Currently agreements are only being made about one 'commodity' at a time, while forests are ecosystems that provide multiple (Van Bodegom, 2012). Forests are more than carbon, and all forest values must be considered holistically IUCN, 2008; Kiss, 2012; Kelly, 2012). Some want to separate the forest values and measure them separately, but this is not possible (Kiss, 2012). It is possible to combine all objectives of REDD, and all are crucial (Sommerauer, 2012; Skutsch, 2012). It is too risky to look at carbon alone, as it might not be accepted (Kiss, 2012). Cutting down biodiversity rich forest for a CO_2 heavy plantation is better for the carbon balance, but worse for biodiversity (Kiss, 2012). If projects do not pay attention to this, you run the risk of reputational damage, as NGO's will expose it (Kiss, 2012; UNREDD, 2012). If the community is also not willing to work with you, you also do not have a project (Kiss, 2012; IISD, 2009; Whalen, 2012). Ensuring participation of all communities might be expensive, but failure is even more expensive (Savenije, 2012). Viewing REDD in a holistic way also ensures more and longer support, as interest for individual parts changes (Cozijnsen, 2012). On top of that, including all ecosystem benefits ensures ecological stability, which is essential for permanent climate change mitigations (SNV, 2012). A healthy biodiverse forest in turn links into livelihood benefits, all aspects interlink (Enright, 2012). Whereas Fons Gribling (2012) does see in the UNFCCC negotiations that parties are starting to see REDD in a more holistic fashion, Van Bodegom (2012) unfortunately does not.

9.5.3.1 Market Potential

Another benefit of a holistic REDD programme would be that credits from such projects are easier to market (Kelly, 2012; Kiss, 2012). There are different types of investors. Some go for the cheapest option. Others want to know more about their off-sets and prefer projects with more co-benefits (Kelly, 2012; Whalen, 2012). For example, Eneco's code of conduct (2012) concerning REDD investments shows they desire investments that contain all types of co-benefits. Aspects such as biodiversity are hard to measure, but it is this triple bottom line that makes REDD so attractive (Kiss, 2012). Through the co-benefits, REDD can distinguish itself from renewable energy projects (Kelly, 2012) and projects with more co-benefits have higher value (Cozijnsen, 2012). However, this might be more the case for voluntary markets in comparison to compliance markets (Whalen, 2012). Although some people may not like it, marketing will be an important part when it comes to REDD (Kelly, 2012).

9.5.4 Trade-offs and Complexity

There are areas where climate mitigation and social aspects can be combined, but not in all areas (Cozijnsen, 2012). Some aspects of REDD that can reduce deforestation, such as agricultural projects with companies and improvement of current law enforcement, do not necessarily lead to local communities getting paid as they are not involved in these cases (Cozijnsen, 2012; Clabbers, 2012). But, as Jos Cozijnsen (2012) states, REDD is not development aid. However, countries that receive money can use it for social development themselves (Cozijnsen, 2012). Edit Kiss suggests doing projects that differ in their degree of each co-benefit. For instance, one project that is in a biodiversity hotspot and another project that does not benefit, but also does not harm biodiversity.

Another issue is the increased complexity that combining different goals can cause. The combination is possible, but it will make it difficult to reach a global agreement (Koster, 2012). Edit Kiss (2012) states that with so many stakeholders, unfortunately somebody is always unhappy, and implementation is more complex than that of a simple carbon project. A holistic approach can make

REDD more complicated (Gribling, 2012) and it might make the negotiations longer than some developing countries might want (Clabbers, 2012). However, this is not necessarily a bad thing, as it also improves the accuracy of the REDD programme (Clabbers, 2012).

9.6 Governance and Implementation

This chapter analyzes how the different stakeholders perceive the role of governance in REDD, including the issue of land tenure. It also looks into the different possible parties involved in the implementation of the REDD programme.

9.6.1 Governance

One of the main problems in the REDD programme is governance (Van Bodegom, 2012; Friends of the Earth International, 2008; Koster, 2012) and corruption (Sommerauer, 2012; Kiss, 2012). Weak governance increases the chance of REDD money disappearing in government pockets without reaching people at the local level (Van Bodegom, 2012). Deforestation generally is a sign of weak governance and makes some argue REDD should not be implemented (Friends of the Earth International, 2008; Lovera, 2009). Complex governance issues cannot be tackled with forest carbon trading, it requires capacity building and a strengthening of rights (Bullocket al., 2009). Strong and efficient governance is indeed central to the success of REDD (Sommerauer, 2011), but part of preparing countries for REDD will be non-market oriented capacity building, including the strengthening of the institutional framework (Verburg & Koenders, 2008). REDD initiatives such as the one between Norway and Vietnam actually encourage the Vietnamese government to work on their governance by combating corruption and illegality (Van Bodegom, 2012).

9.6.2 Land Tenure

Land tenure is part of the entire governance structure (Van Bodegom, 2012). Several NGOs have warned that REDD violates international law if the property rights of indigenous and local communities are not taken into account (Survival International, 2012). However, in many cases, property rights are complex and very unclear.

Clear tenure is essential for a REDD project to work (Horowitz, 2012; Kiss, 2012; IUCN, 2012; Whalen, 2012; Savenije, 2012; IISD, 2009; Skutsch, 2012; Koster, 2012). Even though they might not be recognized by the state, existing local institutions and customary rights must be respected (Anderson, 2011; NCIV, 2012; Ozinga, 2012; FERN, 2012). Past initiatives have shown that recognition of local rights is one of the best ways to protect forests (FERN, 2012; Sikking, Van der Vlist, & Koster, 2009). Secure property rights do not automatically mean that communities have to own the forest, what is essential is that it is clear that they can use it (Skutsch, 2012; Van Bodegom, 2012; Savenije, 2012; Cozijnsen, 2012). However, the question is whether clear land rights also leads to the one using the land having the rights to CO_2 emission cuts (Clabbers, 2012). This has not been arranged internationally nor nationally (Gribling, 2012). What might be most important is not who owns or uses the land, but who is entitled to the rewards of REDD, and this is a complex issue (Skutsch, 2012). Friends of the Earth (2008) are convinced that in the absence of clarity, forest communities will certainly have no guarantee of receiving any rewards for their conservation efforts.

It will take a long time to build up the capacity in some countries to provide this clear tenure (Anderson, 2011) as there are many potential conflicts due to contesting claims, also of different indigenous groups (Cozijnsen, 2012).

9.6.2.1 Land Grabs or Increased Clarity?

The debate whether REDD will lead to recentralization of forest management is also very present among the different stakeholders. As forests gain in monetary value, it could spark land grabs and violations of local rights to benefit from the carbon financing (FERN, 2012; Survival International, 2009; Ozinga, 2012; FOEI, 2008; REDD Monitor et al., 2010; Global Justice Ecology, 2010). This trend will be further aggravated by carbon markets (Lovera, 2009).

Others such as Adrian Enright (2012) acknowledge improvements can be made, but REDD can be a vehicle to contribute to local community rights. Projects can bring a lot of income into a REDD project area, which results in taxes for governments (Kelly, 2012). The CEO of V certainly hopes governments will not reinvent the wheel by recentralizing, as managing a project takes a lot of time to set up and they are not easy to manage. Edit Kiss (2012) believes REDD readiness encourages governments to clarify their tenure and build the capacity, although until then it will be hard to find investors for projects. By mapping what is happening at the moment, local communities can attain more formal rights (Cozijnsen, 2012). If communities also become part of a project, their rights will be more formalized and more discusions occur with the municipality, which strenghtens the relationship beteen the municipality and the forest peoples (Kelly, 2012).

There is indeed a chance that REDD can lead to either clarifying land tenure, or results in more conflicts, depending on the level of corruption in the government (Kiss, 2012; Anderson, 2011). There is already a lot of pressure on forest peoples, and REDD could add another interest fueling the conflict (Cozijnsen, 2012). Although, REDD in iteself is not good or bad, it can go both ways. REDD is not a magic wand that will solve all problems, but if you work together on the solutions, it could clarify tenure and through that improve the situation (Cozijnsen, 2012). Safeguards will be an essential tool to make sure REDD will tip the scale in a positive sense (Sommerauer, 2012; Van der Vlist, 2012). Pressure from communities and NGOs can also play an important role to ensure this (Horowitz, 2012; Whalen, 2012)

Jos Cozijnsen (2012) states land tenure should not be an excuse to postpone REDD. A large collection of articles from anti-REDD organisations (2010) argue that REDD should be forgotten and instead land tenure dilemmas should be solved. However, clearer land tenure has indeed lead to better forest protection in most cases, but it is no guarantee for success (Clabbers, 2012). Clear tenure is essential, but not enough to halt deforestation.

9.6.3 Community Involvement in Implementation

Communities should be involved in every step of the way (FERN, 2012; Van der Vlist, 2012; Avoided Deforestation Partners, 2012; Survival International, 2010) and any solution should work with and not against forest peoples (FERN, 2012). In the last decades, a lot has been developed in the area of community forest management, but it is one of the things that has only recently started surfacing in the climate negotiations and wheels are reinvented (Savenije, 2012).

Including indigenous peoples and local communities is not just a moral issue, we can also learn a lot from them (Sikking, Van der Vlist, & Koster, 2009). Forest peoples have tremendous knowledge on sustainable forest management and they have been very successful in conserving it (Global Justice Ecology, 2010; Survival International, 2009; FERN, 2012; IUCN, 2012; Kelly, 2012). Having to police an area excessively will not work, so you need local cooperation based on respect and benefits for the people (Kelly, 2012). Monitoring has to be done through radar systems, but also locally (Gribling,

2012). Participatory Forest Monitoring is an option, which also engages the local actors and recognises their role (SNV, 2012; Enright, 2012). Involving communities is also potentially cheaper (Kiss, 2012) as teaching communities to use MRV tools can reduce transaction costs (Whalen, 2012). However, this is only the case if the gathered information is reliable and can be fed back into the national MRV system, which might not be the case in the foreseeable future (Enright, 2012). An advantage of Participatory Forest Monitoring is that it offers a time during which you can reward the local communities (Enright, 2012). Investors also prefer projects with community involvement (Kiss, 2011).

In short, for REDD to work, we need the cooperation of local actors, states Adrian Enright, involved in REDD in Vietnam for SNV (2012). Forest peoples are essential to implementation activities and determine the success of REDD (Anderson, 2011). It is challenging, as these people are likely to be badly organised and scattered over hard to reach places (Savenije, 2012). Including special provisions to make sure local people can truly participate might therefore be necessary (Savenije, 2012). A lot of communities may also not be willing to participate, as they believe they are not recognized for preserving nature (Global Justice Ecology, 2010).

9.6.4 Government Involvement

Adrian Enright (2012) says involving governments in the REDD process and integrating REDD into national land planning policies is essential for success. Otherwise you run the risk of projects being reversed by the government in countries with top-down decision making. Governments can also reduce the pressure on forests by removing perverse subsidies (Savenije, 2012). Bas Clabbers from the Dutch ministry of Economics, Agriculture and Innovation states governments will be responsible for ensuring rule enforcement and are responsible for the overall results. It is possible that governments arrange that other parties do this for them. Governments are indeed moving towards more participatory regimes (IISD, 2009).

9.6.5 Industry Involvement

Not all projects have to be conducted together with communities, another option is cooperating with agricultural companies, says Jos Cozijnsen (2012), a carbon trading consultant. This would involve setting up a project for sustainable agriculture without deforestation. It would be used to set a trend, as in the beginning companies would get paid, but after a while it would become business as usual. He laments that some put it as paying the large polluters. Such projects might be necessary to tackle the drivers of deforestation and to cause change in our current agricultural processes. In this type of project you would not involve local communities in the management of the project. As Jos Cozijnsen concisely puts it, they live in the forest and you should just leave them alone.

9.6.6 Involvement of other parties

Forestry agencies will have to shift from enforcing laws to supporting local communities (IISD, 2009) and businesses will have to promote responsible entrepreneurship (Savenije, 2012). Furthermore, third parties are necessary to verify the MRV at the national and local levels (Gribling, 2012). Different NGO's can play a role by conducting pilots and solving parts of the puzzle by for instance creating benefit sharing systems (Enright, 2012).

9.6.7 Collaboration

NGO's, government, local communities and industry are all necessary for implementing REDD (Ozinga, 2012). Forest policy will fail if actors do not work with those they want to influence (IISD,

2009). Collaboration between the different parties will be most effective, using local people for implementation, state for enforcement and third parties for verification (Sommerauer, 2012). NGO's can also strengthen the collaboration, as it is challenging to consult with a lot of different communities (Kiss, 2011). We should try not to reinvent the wheel and instead create a system where everybody plays their best role and form strategic alliances (Kelly, 2012). This might be challenging due to the bad track record of historical relationships between governments and local communities (Sikking, Van der Vlist, & Koster, 2009). Governments have to deliver on their promises and demonstrate reductions, so they have started to negotiate with the stakeholders inside the countries (REDD+ Platform, 2011). Ultimately, an agreement is required (REDD+ Platform, 2011).

9.7 Reaching an Agreement

In 2005, the REDD proposal received wide support and there was a general agreement on the importance of the issue (UNFCCC, 2012).During the UN COP16 in Cancun, president of the World Bank Robert Zoellick called REDD one of the best chances we had to save biological diversity and urged to make decisions now, as there was no time to wait (Global Justice Ecology, 2010). An agreement will improve support and increase pressure on hesitant developed countries (IUCN, 2008), but negotiations to prevent climate change are moving painfully slow, despite science showing urgent actions are needed (Bullock et al., 2009). No clear agreement has been reached yet as many aspects of REDD are still hotly debated. This chapter looks at the stakeholder perspectives on agreements, the politics involved and whether to develop REDD top-down or bottom-up.

9.7.1 An International Agreement

An international guideline is necessary, either from the UNFCCC or the successor of the Kyoto Protocol (Gribling, 2012; Clabbers, 2012). We have to wait and see how it develops, says Fons Gribling (2012). Such an international agreement will likely not be reached before 2020 (Clabbers, 2012). One of the main hurdles for REDD is lack of demand (Kiss, 2012) and significant demand for forest carbon credits requires an ambitious international agreement (Lovera-Bilderbeek & Al Mahmud Titimur, 2012; UN-REDD, 2012; IUCN, 2008). However, there is not a lot of faith that such an agreement is politically feasible (Lovera-Bilderbeek & Al Mahmud Titimur, 2012; Van Bodegom, 2012; Cozijnsen, 2012).

Ciaran Kelly fears that such a large international agreement will result in a lot of people falling between the cracks and tremendous bureaucracy (2012). Instead he and others prefer guidelines set at an international level, a framework indicating principles and direction (Van Bodegom, 2012; Cozijnsen, 2012), including robust environmental and social safeguards (IUCN, 2008; UN-REDD, 2012). We should not wait until 2020, as public funds are also starting to run out (Cozijnsen, 2012). In the mean time, REDD does continue, but the longer the wait, willingness of investors will become lower and an international agreement can reduce uncertainty (Clabbers, 2012) . Fons Gribling believes REDD without an international agreement is not likely, as you cannot take one part from the concept, it has to be seen as a total package.

Another issue is that REDD cannot be seen separately from the international discussions on reduction targets (Savenije, 2012). Therefore there is a possibility that REDD is traded against for another goal that is perceived as higher (Savenije, 2012).

9.7.2 National Agreements

Bas Clabbers (2012) states that indeed safeguards are what can be set, not agreements on specific consequences for local communities in specific countries. At an international level you can set the main lines, but the situation in countries is so specific, you should not attempt to close every crack internationally (Savenije, 2012). The focus should be at a national level and how processes to get REDD operational can be strengthened within countries (Savenije, 2012).

Instead of a top-down international agreement, it is also possible for individual countries to set their own mitigation goals and earn credits for reduction beyond this self imposed target (Cozijnsen, 2012). In this case, not all countries have to agree with each other, which can be difficult to achieve (Cozijnsen, 2012). Some developing countries have shown willingness to set such voluntary mitigation targets during the negotiations (Verburg & Koenders, 2008).

An agreement between sub-national states is also possible, such as the state of California in the United States and Accra in Brazil (Van Bodegom, 2012; REDD+ Platform, 2011). At such a level, agreements can be reached (Van Bodegom, 2012). It is no easy fix for the larger problems, but we cannot wait for the international agreement (REDD+ Platform, 2011).

9.7.3 Complexity and Politics

As Edit Kiss sates, REDD was a hip topic in 2007 and 2008 and it was being worked out at the principle level, but at some point the negotiations all began to go in circles (2012). Governments have difficulty in reaching agreements, as they were unable to even come up with a strong statement during RIO+20 (Cozijnsen, 2012; Van Bodegom, 2012). During international negotiations on climate, other issues such as geopolitics and which countries are in power come into play (Clabbers, 2012; Van Bodegom, 2012). The combinations of different issues within REDD also makes a global agreement more difficult (Koster, 2012). The debate is also becoming increasingly polarized (Gribling, 2012), also due to countries that would rather not take action (Van Bodegom, 2012). Procedural overloading is also increased by countries pursuing multiple issues in the forestry sector at the same time, such as forest certification standards (SNV, 2012).

Another big issue that is hindering the formation of an agreement is mistrust. Since Copenhagen, trust has begun to change into mistrust (Gribling, 2012). Nationalism is increasing and developing countries start proclaiming that they are not responsible and severe measures might hurt their development, while the economic crisis strengthens these sentiments (Gribling, 2012). Pressure from NGO's in combination with mistrust is also leading to international negotiations wanting to make the agreement and safeguards more strict, resulting in less willingness from countries to participate (Clabbers, 2012). Developed countries want to insist it is done their way, while developing countries want some autonomy in their decisions, which results in political tension (Savenije, 2012).

REDD in its nature is very technical and complex, which is why international progress has been slow as all issues have to be addressed in order to come to more simple solutions (Enright, 2012). It is an option to continue with a more basic version of REDD if it turns out that some aspects are too complex at the moment (Enright, 2012). Some argue that the scope of REDD at the UNFCCC is too vast and has to be broken up in pieces to reach consensus (REDD+ Platform, 2011) or the number of options on the table simplified (IISD, 2009).

Fons Gribling states that while opinions are diverging immensely, we should calmly continue and see if an international agreement can be reached (2012). Jeff Horowitz (2012) acknowledges that there are many hurdles for REDD, but striving for perfection should not stand in the way of a potentially good solution.

9.7.4 Top down or Bottom Up

Currently there is a big gap between the bottom up approach and the top down one, and companies are starting to get fed up with governments and the speed they are moving at (Kiss, 2012). If it depends on governments, it might take another ten years before tangible benefits will occur, and while it is important to do thorough background work, governments should recognize that a parallel fashion is necessary (Kiss, 2012). The current pace of action is slow and worrisome is the pursuit of perfection without concrete action (REDD+ Platform, 2011).

9.7.4.1 Top Down

Scholar Margaret Skutsch believes there is enough confidence among countries to reach an international top-down agreement (2012). A few more aspects need agreement such as how credits will be awarded, but these are relatively simple issues. Afterwards it will be a question of trial and error, fine tuning the agreement along the way. Complicated issues such as benefit distribution within countries should not be arranged on an international level, but lessons learned from the first countries that implement REDD are essential for others to learn (Skutsch, 2012). Forming a level playing field that is no longer debated is also necessary to remove uncertainty, which is what companies and investors need (Van Bodegom, 2012). On the other hand, top down decision making can also be perceived as negative by local communities when governments impose their policies without paying sufficient attention to what is happening at a local level (Sikking, Van der Vlist, & Koster, 2009; Global Justice Ecology, 2010).

9.7.4.1 Bottom Up

The original idea was that REDD would be figured out through conferences, but so far the results of this have been disappointing (Van Bodegom, 2012). If we have to wait for the top to figure it all out perfectly, we will stand still for a long time (Clabbers, 2012). Some therefore believe working on pilots in parallel to this process is crucial, to show political will from below and demonstrate what works (Clabbers, 2012; Kelly, 2012; Kiss, 2012; Horowitz, 2012). Until then it is likely the majority of parties at an international level will remain in their positions of waiting to see what happens (Savenije, 2012). Projects conducted by Eneco and the efforts from the Australian Government such as the Indonesia-Australia partnership are examples of initiatives looking for best practices (Kiss, 2011; Australian Government, Department of Climate Change and Energy Efficiency, 2012; Australian Department of Climate Change , 2009). Unlike the Kyoto Protocol, where the large umbrella came first and then the rules were figured out, REDD will need to have clear rules before a larger agreement can be reached (Clabbers, 2012).

Pilots are always a source of learning, but the question is whether it is really expanding at the moment (Van Bodegom, 2012). In addition, local individual projects do not deal with issues of large scale implementation of accounting and benefit distribution (Skutsch, 2012). Another issue is the risk of criticism projects in the beginning phase receive as they are still trying to find the optimal strategy (Kiss, 2012; Kelly, 2012). This is mostly the case when the projects are generating actual credits, as long as you call it a pilot, it is all good (Kiss, 2012). Experimentation is still necessary, as some of the

main hurdles for REDD are the lack of knowledge on different policy instruments (Skutsch, 2012), proper sustainable land use (Sommerauer, 2012), benefit distribution systems and the integration of safeguards into policy.

Arend Jan Van Bodegom (2012), facilitator of the Dutch REDD+ Platform, believes bottom up is the only way to move forward at this moment. Not necessarily all the way from a project level, between states or within countries is also an option, but with parties that want to achieve progress.

9.8 Behind the Different Views

Climate change and REDD are complex in nature, and the opinions on both are many and diverse (IUCN, 2008; Cozijnsen, 2012) even within groups (Kiss, 2012). This makes it difficult for different parties to 'see the forest for the trees' (IUCN, 2008, p. 1). REDD is a fairly new area of development, so naturally there are going to be disagreements (Enright, 2012). However, a lot of opinions are based on subjective interpretations (Gribling, 2012). This section looks into some of the aspects behind different stakeholder perspectives, including knowledge, understanding, interests and values. It also includes thoughts on talking through differences, managing expectations and quick critique. Finally the chapter finishes with how a majority of the parties would like REDD to be viewed: Holistically.

9.8.1 Different Interests

Stakeholders are strongly influenced by their interests. Deforestation is occurring in the first place since governments do not see the importance of forests (Van Bodegom, 2012). Now in the time of economic crisis, environmental questions are once again put lower on the governmental priority list (Van Bodegom, 2012; Savenije, 2012).

Behind debates on technical aspects of REDD, different interests play a part (Clabbers, 2012). Those in the remote sensing business have a stake in pushing a certain style of REDD (Skutsch, 2012), while countries with high deforestation rates claim sustainable forest management and other '+' parts will be too difficult to monitor, not in the least because without these activities they can get a larger part of the financial pie (Clabbers, 2012).

9.8.2 Differences in Knowledge and Understanding

An important issue is that local communities have no knowledge of what exactly REDD is, and neither do most of the local NGO's (Ozinga, 2012; Anderson, 2011). Simoes et al. (2011) for example discovered that local small farmers have a positive perception of REDD, but this is based on incomplete information as no clear REDD framework has been established yet.

Edit Kiss (2012) also explains that before you start talking to someone from a different business, an NGO or a politician, you first need to clarify what you are talking about. During negotiations there are different levels of knowledge as well as miscommunications and misinterpretations (Clabbers, 2012; Gribling, 2012; Savenije, 2012). A lot can be won from gaining a common understanding, as REDD is often rejected or accepted on insufficient information (Savenije, 2012). This is also in part because anything that has to do with forests is branded as REDD (Clabbers, 2012). A lot of stakeholders are also not aware of what others have been doing, resulting in the reinvention of wheels (Cozijnsen, 2012). Only a few are completely aware of what is going on, and the further away from the international and national negation tables, the more twisted the stories become (Savenije, 2012).

9.8.3 Different Values

The REDD debate is also made more complex due to the different principles of the parties involved (Kiss, 2012; Clabbers, 2012). Sometimes these values even overshadow the technical issues that have to be solved (Cozijnsen, 2012). An example of such a strong value debate can be seen in the area of finance (Clabbers, 2012). Off-setting is seen as developed countries paying their way out of emission cuts and should be rejected (FERN, 2012), but in reality this subject is not so black and white, as restrictions can be set to off-setting (Kiss, 2012). However, Bas Clabbers predicts that even if REDD theoretically reaches perfection when it comes to sharing benefits with communities and fulfilling strict safeguards, some parties might still reject REDD on the basis of ideological reasons. He also adds that once people are against the programme due to principles, they tend to be against everything associated with REDD.

A strong ideologically based critique is that commoditization of ecosystems is disrespectful to mother earth (REDD Monitor et al., 2010; Global Justice Ecology, 2010). In the anti-REDD collection of articles 'NO REDD' (2010), the combination of carbon, biodiversity, water, soil and development and low carbon lifestyles is called 'Gourmet REDD' and is seen as commercialization of even forest peoples themselves. REDD attempts to maintain continued economic growth and protects the fundamentals of a broken system (Global Justice Ecology, 2010). Another ideological split is caused by some parties that refuse to have anything to do with corporations (Van Bodegom, 2012). However, different values do not always have to be negative, as NGO's with different values have different priorities and try to contribute to that specific facet of REDD (Enright, 2012).

Edit Kiss (2012) states that in some cases, people have principles and ideas, but no practical reality. The difficulty of creating a successful project on the ground is not always realized (Kelly, 2012). Some people judge REDD as wrong and suggest to look at the drivers of deforestation or the supply chain, but do not suggest a way how to do it, laments Edit Kiss, and therefore do not present a real alternative.

9.8.4 Talking it Through and the Expectations

Bas Clabbers (2012) tells that by introducing REDD at the COP's, deforestation became a topic on the agenda of many countries. This awareness is the first step. It has become an issue for the more powerful ministries of finance as well as country leaders. Despite the lack of an international agreement, such awareness has brought positive consequences. Herman Savenije believes black and white contrasts will become less over the next few years (2012). By engaging with each other, parties seem to understand each other more and more (Kiss, 2012). Hopefully parties will be able to find each other and reach a compromise (Gribling, 2012). There are for example considerable overlaps between the private sector and NGO's in their desire to provide benefits to forest communities (Whalen, 2012).

Expectations of what REDD can achieve also differs amongst stakeholders (Cozijnsen, 2012; Clabbers, 2012). High expectations of what REDD will pay for leads to disappointment (Cozijnsen, 2012). These expectations are not always positive. NGO's such as Survival International (2009) expect that the rights of indigenous peoples will be hurt. However, the expectations of free prior and informed consent are also unrealistically high, says Bas Clabbers (2012). There is a tendency to demand consent from everyone in the population. If that would be the case in the Netherlands, we would never be able to build a road again (Clabbers, 2012).

Important to realize is that there will always be somebody that does not agree (Clabbers, 2012; Kelly, 2012).

9.8.5 Quick to Judge

An issue with REDD is that the media and other parties such as NGO's start publishing negative stories without complete understanding, harming the reputations of companies and other parties with good intentions (Kiss, 2012). There is a large risk something will go wrong, it is a process that will not be perfect from the beginning (Kelly, 2012; Cozijnsen, 2012; Clabbers, 2012). Therefore it is difficult to get a project started with everybody watching (Cozijnsen, 2012). Initiatives should be given a chance to develop (Kelly, 2012; Cozijnsen, 2012; Clabbers, 2012).

9.8.6 Holistic View

REDD is criticized for being carbon focussed and NGO's warn for the negative consequences of commoditization. However, NGO's are not the only ones pleading for a holistic view (Cozijnsen, 2012). Christian Barthod from the ministry of Ecology of France calls for the integration of utilitarian, ethical and aesthetic values of forests (IISD, 2009). Carbon trading alone is insufficient to tackle climate change, a holistic approach is required (IISD, 2009) as well as drastic emission cuts (UN-REDD, 2012). Degradation has not received sufficient attention (Skutsch, 2012) while conservation has received too much, as forests can sustainably provide timber (Sommerauer, 2012).

Demand for halting deforestation is not limited to its carbon value, Jos Cozijnsen explains. There are many companies that want sustainable agriculture, for instance palm oil, without deforestation. With REDD money or diverted agricultural subsidies, agriculture can be made more effective and sustainable. Solidaridad also sees synergies between REDD and round tables. Round tables stress farmer engagement, while REDD has funds and both emphasise social and environmental safeguards (REDD+ Platform, 2011). Next to improved agricultural practices, promoting energy solutions such as improved cook stoves for locals also reduces forest pressures (Enright, 2012). Overconsumption of meat, fuel, food and fibre also has to be reduced to halt deforestation (FERN, 2012, FOEI, 2009).

Ecosystems contain relationships and interactions that cannot be separated into different commodities (Global Forest Coalition, 2012). A biodiverse forest is more sustainable in the long term than a carbon plantation and REDD should be seen as a part of a larger development strategy (Clabbers, 2012). REDD has begun to shift more to LULUCF[3] and the integral approach is becoming more and more important in the international negotiations (Gribling, 2012).

9.9 The Next Step

For a lot of parties, developing capacity in host countries (WWF, 2012; Savenije, 2012) and continuing with pilots is the next step (Savenije, 2012, Enright, 2012; IISD, 2012), especially in the area of voluntary markets (Whalen, 2012) and community engagement (REDD+ Platform, 2011). Knowledge sharing will also be an essential step to take (Savenije, 2012). Edit Kiss (2012) believes a key step will be stimulating demand to spur the process, while Harko Koster (2012) pleads for long term commitments of at least thirty years concerning targets and funding. Understanding is needed of which policy instruments, such as PES, work in which contexts (Skutsch, 2012) as well as independent evaluation of the ongoing implementation (Sommerauer, 2012). The rules for REDD have to be established before an international agreement is reached (Clabbers, 2012).

[3] Land use, land-use change and forestry

Those arguing in the name of indigenous peoples, feel the next step should be the inclusions of forest communities in REDD, including strong safeguards and full, prior and informed consent (Van der Vlist, 2012; Survival International, 2012). As was expressed in the Global Justice Ecology Video by indigenous people: 'we ask for self-determination, we don't ask for more, and we don't want less.'

Some parties also push for a holistic view as the next step (IISD, 2012). Sustainable Forest Management should be promoted instead of conservation (Sommerauer, 2012) and plantations should not be an option (Friends of the Earth International, 2008). Saskia Ozinga (2012) suggest to drop the carbon focus completely and to link payments to governance improvements, while the Global Forest Coalition (2012) suggests to include social, cultural, legal and economic incentives to halt deforestation. The private sector also needs to contribute by working on sustainable production methods (Cozijnsen, 2012). The next meeting of the Subsidiary Body for Scientific and Technological Advice of the UNFCCC in November 2012 does indeed seem to take a broader approach than before, by discussing 'how to address drivers of deforestation and forest degradation, including consideration of social and economic aspects in developing countries at the national level' (UNFCCC, 2012).

The World Bank wants to focus on building MRV capacity to bring it to market as soon as an international framework is in place (Bosquet, 2011) and Fons Gribling from the Dutch ministry of Foreign Affairs feels the most important path of action is to continue striving for an international consensus (2012). Edit Kiss and Jos Cozijnsen (2012) feel implementation by governments should happen now to see if it works. One thing is for sure, the REDD process should not be slowed down, as talking about REDD has been going on for more than five years, and there is still no real mechanism (REDD+ Platform, 2011).

9.10 Conclusion of the Results

When analyzing stakeholder opinion of the causes of deforestation, most drivers are mentioned by all three spheres of market, state and civil society. The largest conflict appears when the majority of civil society believes deforestation by the poor for their livelihoods is a large driver, while state never mentions it and actors in the market sphere seem to be in conflict about its importance.

The definition of REDD is not coherent within spheres and appears to differ per stakeholder. Most parties are positive about REDD, although some do feel it will not solve all drivers. Government parties on the other hand stress that REDD is not meant to tackle all drivers and forms an extra incentive for countries to adjust their policies. Several NGO's are strongly against REDD as they feel the consequences will be negative, especially for local communities.

When it comes to financing, market and state parties mostly favour markets due to their efficiency and the stimulation of demand. The latter is more the case for regulatory than voluntary markets. However, this also leads to the off-setting debate, as several NGO's strongly argue against off-setting, as they see it as buying off sins and resulting in no real emission cuts. Other parties stress that the issue is not black and white, and there are ways to solve these issues. Funds are good for capacity building, but are not likely to offer enough funding. The majority mostly worries about the flow of financing, and vote for a mix of sources. A transition of mostly fund to mostly market is possible.

With the issue of scale, stakeholders appear to refer to accounting and crediting as well as implementation interchangeably. General consensus is that a national level accounting system is

needed to prevent leakage. Implementation will happen at all levels, but the question is how it will fit together. Crediting local projects is possible in a nested view to make sure money reaches the local level, or governments are responsible for spreading the benefits.

When it comes to the main goal, governments mostly see it as simply cutting carbon by stimulating countries with financial incentives. Business and civil society actors are more in favour of 'stopping deforestation', which most see happening through sustainable forest management. REDD can potentially have positive or negative effects in numerous areas. Some NGO's are strong believers it will have a negative outcome, while other NGO's and businesses are more of the opinion that with safeguards it can have a positive effect. The issue of local communities is becoming increasingly important in the negotiations. There are some synergies between the different goals, although not in all areas. Those that do not see REDD and community benefits as always compatible, also believe local sustenance farming is not a main driver of deforestation. Importantly, most parties consider it a necessity to see REDD as a whole. Forests are ecosystems with multiple values and carbon should not be the only focus. In addition, the whole package is better to market, mostly in the voluntary market as co-benefits are a differentiating factor for REDD credits. The combination might make the debates more complex, but it will lead to better solutions.

Governance is recognized as a vital issue, mostly so by parties in the sphere of civil society. Clear land tenure will take long to create and is complex, but it is essential for effective forest management. Not necessarily ownership is important, but the use rights. Carbon rights however, are still a vague area. There is fear from NGO's that REDD will lead to land grabs and recentralization, while mostly the market actors see REDD could potentially lead to strengthening of tenure. Not in the least because it is cheaper for governments to let communities manage the forests. Tenure is not an excuse to postpone REDD and it is also said that solving tenure alone does not always lead to successful forest management. NGO's mostly stress that communities should be involved in the REDD programme due to their knowledge of nature and the general consensus is that they should. Not only because it is just, but also for effectiveness. State and the more positive NGO's also see the importance of the role governments play in setting the overall framework. The market actors mostly promote strong collaboration between different parties, as well as some parties from civil society. NGO's also play a part in this collaboration.

Most parties agree the international negotiations are taking long, and especially businesses are getting impatient to start working in parallel. The majority sees setting guidelines and safeguards as the task of the international negotiations. State actors mostly think an international agreement is necessary, while civil society and state want to see if it works with whoever wants to move forward now. What makes reaching an agreement so complex is the building mistrust between parties, strengthened by the crisis, leading to stricter rules being set and less parties willing to agree with what is on the table. State and civil society have their arguments for top down, while all different spheres hope pilots will reduce uncertainty and aid the international agreements. However, there are warnings that separate pilots do not automatically translate in a larger scale programme.

At the base of the different viewpoints are different interests, but differences in knowledge, understanding and values are equally important. Especially local communities lack knowledge, but all parties face miscommunication due to different understandings, many different definitions and lack of clarity because of the newness of REDD. Values are very important, as some parties see issues very

black and white due to their principles, and even if REDD would theoretically be perfect, such a stakeholder would still reject it. This could be seen by the rejection of 'gourmet REDD' that included all benefits, as commercialization of the sacredness of nature and even people. The strongest value conflicts are in the area of finance due to off-setting and the use of markets that is said to strip nature of its value. There are also some civil society parties that want to have nothing to do with corporations, while at the same time there are also many that do not trust governments. Talking it through might help in moving away from the black and white paradigm and also results in people understanding each other better. It remains that there are different expectations of REDD that colour the debate, either because they expect too much of REDD or because they expect REDD to only bring negative consequences. This results in quick negative criticism while projects are in their early stage, trying to find their footing.

In line with the necessity of combining all of REDD's objectives, most actors argue for a holistic view of REDD, and this shift is even happening in the international negotiations, although other parties are not always aware of this. REDD should look beyond carbon and simple conservation, and include the multiple values of forests. It should fit in the wider context of sustainable agriculture and reducing demand. State actors on the one hand argue REDD is not going to tackle all drivers of deforestation and is just an extra incentive. On the other hand they also see that REDD should be seen holistically, as a part of a wider development strategy. This does make the international agreement more complex. However, the majority also sees that the role of international agreements is limited to setting clear guidelines and leave the rest to the implementing parties. However, mistrust is leading to these guidelines becoming stricter and stricter, which does not aid the negotiation. REDD will already be more holistic due to the recognition of the importance of governance and land tenure, and it is stressed that REDD should be used to improve these aspects. Some parties, however, will never agree, not only due to a different understanding, but also due to different values. They will always see REDD as a negative initiative if it uses off-sets or by marketing the values of nature. The question then is more a debate whether adjusting natural values to our current market systems is positive or simply keeps a faulty system in place. However, no concrete alternative on how to reset this faulty system or the 'real drivers of deforestation' is given. REDD therefore seems to be the best current solution in the eyes of most parties, but for most only if seen in a holistic way.

10. Conclusions and Recommendations

This final chapter summarizes the main lessons learned from the literature review and the results. The first paragraphs focus on the conclusions drawn from the REDD programme on the perception of causes, how all major debates on REDD link together, the rise of collaboration, and the necessity of stakeholder dialogue. It also shows the analysis of the influence of issue linkage on achieving stakeholder acceptance and the ability to tackle all drivers, the fundamental mismatch between value and price and whether REDD is perceived as the right solution. It then continues with the lessons applicable to wider commons research, the limitations and recommendations for practice and further research.

10.1 The Perception of Causes

When stating the main drivers of deforestation, respondents frequently name the proximate causes of wood extraction and agricultural expansion. Of the underlying drivers, poverty and demand are sometimes mentioned, while land tenure is often discussed, but more in the case of local community rights violations than directly acknowledged as a driver of deforestation. Governmental subsidies are also occasionally touched upon, but most surprisingly, positive cultural change is hardly ever spoken about. Very rarely was demand of companies and customers for more sustainable products mentioned, as it was referred to as a reason why companies were looking for solutions. Perhaps most interestingly is that the largest conflict concerns whether local populations deforesting for their livelihoods is a major driver. State actors never explicitly mentioned it while the majority of civil society sees it as a major driver. The actors in the market sphere are split about its importance. It is found to impact what these actors perceive as the right solutions, as those that did not see these local groups as a large driver that needed tackling, also see less opportunity for REDD to deliver positive benefits for both climate change and community development. They tend to take the stand of solving the issue through working together with industry or larger national programmes, without meddling in local community life. Benefits for communities would come through governments dividing funds.

10.2 Linking it all together

Finance, scale, the combining of goals and reaching an agreement are all debates within REDD and closely linked together. The majority of the stakeholders are in consensus that private and public funding have to be combined to reach sufficient funding levels. Markets have the potential of creating larger financial flows, but an international agreement on steep emission cuts needed for a regulatory market seems far away. Gathered from the collected data, most actors seem to believe that such emission cuts are not attainable and the role of the international negotiations is to set clear safeguards and guidelines. This would stimulate the voluntary market, as such guidelines would reduce the risks of investments. The piloting phase aids by clarifying how these safeguards can be implemented. Voluntary markets are also better suitable for REDD projects with co-benefits, as investors are more likely to look for differentiating factors and the story behind an investment. A strict regulatory market might push parties to the most cost-effective measures instead of those that differentiate with co-benefits. Only when implementation of safeguards is sufficiently clear, would such a market not lead to REDD hurting areas such as biodiversity and community rights. As was found in the literature, the process of valuation and creating markets for ecosystem services will be a ‘bottom up’ approach through means of mutually beneficial trades (Pearce, 2001b). This is also likely to be the case for REDD. The intermediary step to gain more certainty in the markets is to set

guidelines and safeguards that will boost the voluntary markets, which are more likely to invest in REDD on a project level. Confidence on implementation will be built, while in parallel, national capacity building through funds to strengthen governance and tenure rights will occur. This is similar to the nested approach which allows countries to start with projects, while working on scaling it towards a national level. Probably only at this time will international parties be secure enough to agree on an international regulatory market.

10.3 The importance of Collaboration and Co-management

In the academic field of commons management, REDD literature and perceptions of the stakeholders gathered through data collection, collaboration between parties is becoming increasingly recognized as the best solution. The role of communities in management has gained importance in the stakeholder negotiations, albeit later than in the academic field of the commons. However, community management alone is not sufficient, which is a point some NGO's have not embraced yet, as governments have to back up the tenure system and prevent illegal encroaching on community territory, as well as tackling larger deforestation drivers. However, both the literature and the respondents seem to acknowledge the best chance of success is when the benefits of both national and local management are combined. This realization is a beginning to tackle what is at the core of issues concerning common resource management, which is different spheres not taking responsibility for the issue or not being recognized for their potential to contribute.

10.4 The Relevance of Stakeholder Dialogue

Strong parallels are found between the literature and the perceptions of the different stakeholders. However, the literature is generally more nuanced, while several stakeholders show a stronger position in their opinions, however, these are also often based on assumption of what other stakeholders argue for, while this is not always true. One of the major requirements for any agreement to be formed is a common understanding between different parties. And not only understanding, knowledge and interests play an important role, but values as well. As was put forward in the commons literature, analytical deliberation, which is a dialogue between communities, scientists, governments and other interested parties, can provide the information and trust that is necessary to produce mutually agreed upon management systems (Dietz et al., 2003). Examples of dialogue working towards a common understanding were given by respondents. Strong objections against off-sets were replaced with consensus on a possible solution after talking things through. Issues are rarely black and white, and dialogue can let the whole range of different shades surface. Talking together and sharing knowledge should lead to more understanding between parties and a less polarized debate. Already from this research it appears that in a lot of areas, stakeholders are more like-minded than they are to be aware of.

One of the reasons why REDD may succeed unlike its predecessors is due to close scrutiny from outside parties, but some of these parties are also quick to judge, which is not aiding the building of trust. Dialogue will also lead to more trust and assumptions made about other parties clarified. More trust also means fewer tendencies to push for stricter safeguards and thus more likeliness to reach an agreement. Important to note is the significant influence of soft effects as identified in the market incentive literature (Tietenberg & Johnstone, 2004). REDD is a fairly new and complex system, and it will take time for different participants to fully understand what REDD is.

10.5 Matter of issue linkage

One of the main questions is whether linking different issues would help different parties to reach an agreement. Combining different goals is a major debate within REDD, and from the literature, a split becomes clear between those that see equity and ecological co-benefits as a fundamental requirement, while others feel it is erroneous to prioritize co-benefits at the expense of carbon emission mitigation. The objection links to the related question, which is whether combining all objectives will overburden the programme and result in less efficiency, meaning less ability to tackle the drivers of deforestation. However, the literature focusses on the trade-offs that linking the issues might cause, while the respondents see the necessity in linking all issues. The consensus is these issues should be part of a holistic solution. As the literature states, strong independence of issues indicates a substantive linkage in which a holistic solution is an option (Haas, 1980). Forests are ecosystems with multiple values, not just carbon. The whole ecosystem has to be considered to ensure long-term solutions, not short cuts facilitating only carbon absorption. The combination might make the debates more complex, but it will lead to better solutions as well as longer support as it also relates to the food crisis and sustainable agriculture. Splitting up the different ecosystem services in separate markets would also likely result in undervaluation of the total worth of the forest ecosystem (Bockstael et al., 2000). In addition, the whole package is better to market, mostly in the voluntary market as co-benefits are a differentiating factor for REDD credits. Parallel to the literature, respondents stress implementation determines the achievement of synergies. Not every single aspect will have similar co-benefits, but the complete picture must contain all objectives and more measures to achieve them. While there is a general tendency for all parties to see the necessity of this, the vehement opposition of REDD are under the impression that only they see it this way. Civil society and market actors all show indications of realizing the importance of an all encompassing solution, but even the state actors, who indicated REDD is only meant as a push and carbon is the main goal, see that REDD is moving towards a holistic solution. The question is whether this holistic solution in its entirety will be under the name REDD, or whether REDD will be the financial incentive as a part of a broader strategy, fitted together with other programmes.

In this case combining ecosystems services, community development, sustainable agriculture and more seems to go beyond multiple issues put on a table to reach an agreement. There is rising belief that for this solution to work, a truly holistic view has to be taken, whether this makes it more complex or not. However, one respondent did point out another potential harm of issue linkage. As REDD is part of the international climate discussions, there is a risk that REDD might be exchanged to reach an agreement on another issue.

10.6 Mismatch in Value and Price

One of the most fundamental issues lying at the heart of forest loss is the lack of value attributed to its ecosystem services in our current market system. REDD attempts to internalize these values, most specifically carbon, and ensure that forests attain monetary value when still standing. It would solve the trade-off between economic gains and ecological preservation, especially when seen holistically, combined with matters such as sustainable agriculture. Similar as mentioned in the literature on ecosystem values, some parties in the collected data avidly oppose this as it would strip the inherent value of natural services. Especially in the case of a holistically viewed REDD, as even the people would be part of the market value. This also shows the strong influence of values, as no matter how perfectly REDD will be executed, this debate will remain. The question whether it is best to adjust

nature's values to our current system or to avoid this as it will keep a broken system intact, lies beyond the scope of this thesis. It is important to repeat what was said in the valuation literature, nobody is implying that economic values are the only values that matter (Bockstael et al., 2000).

10.7 The right solution?

Some argue that separate measures such as improved governance and clear tenure are the solution, instead of creating value for standing forests. However, the literature shows that an overarching framework of financial incentives is likely to be needed to address these separate issues at a larger scale (Gullison et al., 2007; Laurance et al., 2006). Unsustainable agriculture, for example, is still more profitable than sustainable agriculture (Pearce, 2001b). The financial incentives would provide a push for governments to perform their duties of setting the right framework and enforcing it. The majority appears to be in favour of continuing with REDD. However, the consensus is that financial incentives alone are not enough, REDD is unavoidably connected to issues such as improving governance.

One message that reoccurred during the data collection was that there will always be somebody that is unhappy. There are some parties that are likely to remain against REDD, mostly because of differences in values. As was pointed out by some, such value driven perspectives do not always contain practical realities. There are NGO's that are wary of governments in deforesting countries, but also do not want to cooperate with corporations. Negative issues of REDD are stressed, but in many cases a concrete alternative is not given. And as Hardin aptly states, the system need not be perfect, but merely preferable to the current situation, as keeping the status quo is an action in itself, possibly resulting in total ruin.

10.8 Holistic thinking as part of the commons logic and other lessons learned from the case of forest management

Studying stakeholder perception of a potential solution for forest management shows some confirmations of theories generated by the commons management literature. Besides interests, understanding heavily influences the way different parties perceive an issue and its solutions. Furthermore, the values of the stakeholders are also crucial.

This research also confirms it is not necessarily the property regime that matters in a successful management system. Collaboration is the most likely form of success, as both community management and larger governmental support are essential. As was indicated in the market incentives literature, it is not a debate between market systems or command and control, but how different mechanisms can be combined together in creating the best outcome.

The case of forest management also provided more information about management of a global commons. Community involvement is still crucial, even in managing a global commons. However, the case of REDD shows that within this global attempt at a solution, many parties doubt whether the issue of deforestation can be tackled with a global agreement. Respondents indicate reaching such an agreement is very complex and instead of globally managing this global commons, some even state progress will only be made with those parties that want to move forward. This confirms the issue linkage theory that a complete agreement of all parties is improbable, instead some parties will from smaller and stable coalitions (Kemfert, 2004).

Perhaps the most interesting conclusion that can be drawn from this case is the necessity of viewing global commons management solutions in a holistic way. As Ostrom et al. (1999) state, global

commons management is complex due to the linkages between different commons. We have become more distant from our environmental problems and it is difficult to comprehend the ways our commons interact, which makes finding the right solution particularly challenging (Ostrom et al., 1999). From the results it shows that the majority of the actors are becoming aware of the importance of the interlinkages between different commons. They are of the opinion that focussing on carbon alone will not lead to long-term solutions. Other ecological services such as water regulation and biodiversity, as well as community development all have to be included. It may increase complexity, but it improves the solution. Ansari and colleagues (in press) identified it was necessary for all to attain a 'commons logic' before a solution was agreed upon, meaning an awareness that a resource is finite and depletion will affect all. To this logic, the realization that all commons are linked may have to be added, to prevent the commoditization of separate aspects, leading to suboptimal solutions and undervaluation of ecosystems as a whole.

10.9 Limitations

There are as many opinions as there are people in this world. The results of this research are based on the material gathered from different stakeholders and although it might be representative of the general perceptions of stakeholder groups, this research could never portray all perspectives. The opinion of local indigenous peoples, a key group, is only included through the medium of NGO publications, meaning there is a chance of bias or incomplete information. Furthermore, although preventive steps have been taken, personal views may still have coloured this research. The results of this research are also based on subjective opinions of stakeholders to generate an overview of their understanding. These perspectives may not be based on factual information.

10.10 Practical Recommendations

This thesis was written with the aim of facilitating the ongoing stakeholder dialogue by objectively portraying the opinions of different actors. Interests, understanding and values of stakeholders have a major impact on reaching an agreement. The results show that many parties share a lot of common ground in the way they view REDD, but are not always aware of this. Both the literature and the respondents indicate dialogue aids in reaching a common understanding and I recommend stakeholders to continue the ongoing dialogue with the aid of this overview.

Besides reaching a common understanding, more factual knowledge on what works within REDD is also needed. In order to stimulate the progression of REDD as a solution, testing the concrete implementation of collaboration and safeguards is essential. More investigation is also needed into the interlinkages between the different eco-systems to facilitate a holistic approach. Actors are becoming more aware of the necessity of a holistic solution, but many interlinkages between the commons are still unclear. Increased knowledge of ecosystems as a whole will also reduce the uncertainty in the negations concerning REDD, increasing the likelihood of a wider agreement.

10.11 Recommendations for further Research

Research can be conducted to see if other commons are showing an increased demand for holistic solutions and an increased awareness of the need for collaboration. Continuing research as REDD progresses will also show lessons of one of the first global attempts to attack an issue of global commons management, especially since it is more likely to develop bottom-up unlike the Kyoto Protocol.

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Appendix A: Study of the four property regimes

Open access does result in tragedy when demand exceeds the regenerative capacity of the resource and the technology is present to harvest it. No structures for management are in place, but often this open access situation only occurred because previous communal tenure systems were destroyed.

Private property rights are a frequently used institutional arrangement, but it is not always sufficiently precise when the system that allocates rights is faulty. The costs of enforcing these rights can also be steep; especially when the community views private property rights as illegitimate. It can occur that there are competing claims by communities on these resources. As for the regulation of use, secure private rights would lead to rational usage of the resource as the costs and benefits are for the individual. However, this is not necessarily the same as sustainable use. Clark (1973, as quoted by Feeny et al., 1990) shows that depletion can be the economically optimal path to pursue when resources are slow in growth or which mature late. It is for example the economically logical option to drive whales to extinction.

Communal regimes tend to be successful in excluding outsiders, but only when their regimes are legally recognized. However, external pressures such as market opportunities may result in a breakdown of these exclusion mechanisms. Communities are also able to devise mechanisms that fairly distribute use rights among its members. Much research has been done on the success of this regime, as identified in the last paragraph. However, Ostrom (1999B) also identified that communities do not always succeed. Some of them will not organize into a system managing the resource, access to scientific information may be limited and they may be unable to deal with common resources of a larger scale.

According to Feeny et al. (1990), **the state** is also not necessarily the right solution. While in theory resources are managed by the government, in reality the regime can be more similar to open access. Another aspect is that flaws of politics are mirrored in the way resources are governed. Examples are that some governments may see free access as a right, or the government tends to represent the interests of elite groups instead of the wider society. Sustainable use is also not a given, particularly because state officials in charge of decision making do not have the time horizons or interests of the overall society, private owners, or even the government itself. This leads to a proliferation of regulations, without successful outcomes. Ostrom (1999B) also confirmed that governments are rarely successful in designing effective sets of rules to regulate common resources across a wide domain.

The property regime alone will therefore not predict how the common resource will be used.

Appendix B List of People Contacted

Who	Type	Mailed	Appointment
Michael Dorsey	academic	6-jun	scheduling
global forest coalition	NGO	20-jun	
Edit Kiss	Business	23-5-2012	29 June
Marriott	Business	4-jul	
Ecofys	business	23-5-2012, 10-6	
REDD forests	business	10-jun	
celestial green ventures	business (trading company)	20-jun	6-jul
REDD web platform, UNFCCC	government	20-jun	
marina t. Campos		4-jul	8th of August
IFCI Australian government	government	10-jun	
AUSAID, government aid programme	government	10-jun	
climate change secretariat	government	4-jul	
Mongabay	media	20-jun	
Greenpeace	NGO	20-jun	forwarded
WWF	NGO	20-jun	
friends of the earth	NGO	10-jun	possible scheduling
forest peoples programme	NGO	20-jun	
International Institute for Sustainable Development (IISD)	NGO	4-jul	
REDD monitor	NGO	6-6 (forwarded by Dorsey)	
fundacau amazonas sustentavel	NGO	4-jul	
survival for tribal people	NGO	4-jul	received
(IIED) The International Institute for Environment and Development	NGO	4-jul	
SNV	NGO implementing REDD	6-jun	scheduling 28th of June
Nederlands Centrum voor Inheemse Volkeren	NGO indigenous	6-jun	received
Face the Futures	NGO involved in REDD	23-5-2012, reminded 18-7	received
World Land Trust	NGO involved in saving forests	10-jun	
Lauren Gifford	PhD on REDD	6-6 (forwarded by Dorsey)	
the REDD Desk	platform	20-6-2012, reminded 18-7	scheduling

Rainforest Coalition		4-jul	
Avoided Deforestation Partners	network	4-jul	received
REDD+ partnership	platform	10-jun	
forestindustries.eu	business	10-jun	received
IUCN Nederland	NGO	10-6-2012	
Tosi Mpanu Mpanu, Director - Clean Development Mechanism (CDM)	government	4-jul	
The forest carbon partnership facility FCPF	fund	10-jun	
climate investment funds	Fund	10-jun	
Oxfam Novib	NGO	20-jun	contact person no longer works for REDD
Bas clabbers	government	20-jun	3-jul
REDD platform		20-jun	2-jul
carbon planet	business	20-jun	
CIFOR		4-jul	
natural forest standard	standard	20-6-2012, reminded 18-7	scheduling
Tropenbos International	NGO	20-jun	28jun 11.00
Jan Willem den Besten, IUCN	NGO	4-jul, reminded 23-7-2012	scheduling
Jos Cozijnsen emissie handel	NGO/business	4-jul	9 July 14.00
Fons Gribling, BuZa	government	4-jul	16 July
FERN, Saskia Ozinga	NGO	4-jul	received
Rainforest Foundation	NGO	4-jul	
Idesam	NGO	4-jul	
Margaret Skutsch		4-jul	scheduling
Department of Climate Change and Energy Efficiency, Australia	government	4-jul	forwarded

Appendix C E-mail

Dear….

I am a master student from the Rotterdam School of Management in the Netherlands. I study Global Business and Stakeholder Management and I am writing my master thesis on the different stakeholder perceptions on Reducing Emissions from Deforestation and Forest Degradation (REDD).

My goal is to create a complete picture, showing how all key parties view the REDD programme. This can aid the different stakeholders to understand each other's perspectives and support the ongoing dialogue.

During my research I came across your name/organization and I believe your expertise could improve my thesis immensely. If it is possible, I would like to arrange a telephone interview or one through Skype. If this is inconvenient for you, you would also do me a great favour by answering as many questions as possible from the attached document.

I can send you a copy of my master thesis once it is done. If you know anybody else that is able and willing to help me with my thesis, please forward the e-mail or let me know. If you have any questions, please do not hesitate to contact me.

Thank you very much in advance.

Yours sincerely,

Ilona Jankovits

Skype name: ilona.jankovits

Appendix D Interview Guide/ Questionnaire

Questionnaire for

1. Overall Opinion

1.1 What are the causes of deforestation according to you?
1.2 Do you believe REDD is a promising solution and why?
1.3 Which causes of deforestation do you believe REDD tackles?
1.4 What are the main obstacles that still have to be solved for REDD to be a success?

2. Goals

2.1 What do you think is/should be the main goal of REDD?
2.2 What other important goals does the programme have?
2.3 Which of these goals are vital for REDD to succeed?
2.4 Which have to be included for REDD to be acceptable for you?
2.5 Do you believe combining these goals might hurt the overall effectiveness of REDD?

3. Design

3.1 What should be the source of financing for the REDD programme and why?
3.2 At what scale should the REDD project be implemented and why? National, sub national or nested?

4. Implementation

4.1 Do you fear REDD will lead to recentralization of management?
4.2 Which parties should be involved in the management system (monitoring and enforcement) of REDD and how?
4.3 Who should the property rights of the forest land belong to?
4.4 Could REDD work without secure property rights?

5. Future Steps

5.1 What do you feel is the next step to take for REDD to be a success?
5.2 What do you think your role is in this?

6. Stakeholders

6.1 Which (other) parties are important in the decision making process?
6.2 Do you believe these other parties differ with you in opinion on some of the aspects mentioned above?

Appendix E Data used for Analysis

What	Type	Stakeholder sphere	Given by…
Interview Edit Kiss	Interview	Business	
Celestial Green Ventures	Interview	Business	
website survival international	Website	NGO	
Survival for Tribal People	Questionnaire	NGO	
SNV	Interview	NGO	
NCIV	Questionnaire	NGO	
website ADP	Website	Platform	
Avoided Deforestation Partners	Questionnaire	Platform	
website forest industries	Website	Business	
Forestindustrieseu.	Questionnaire	Business	
Bas Blabbers	Interview	Government	
Arend Jan	Interview	Knowledge Institute/platform	
website Tropenbos	Website	NGO	
Tropenbos	Interview	NGO	
website FERN	Website	NGO	
FERN	Questionnaire	NGO	
Website IUCN	Website	NGO	
Discussion Paper IUCN	Paper	NGO	Jos Cozijnsen
Opinion World Bank	Article	Government	
WWF website	Website	NGO	
Opinion WWF	Article	NGO	
Opinion Simone Lovera	Article	NGO	
Opinion landowners	Academic Article	Civil Society	
Website SNV	Website	NGO	
Website NCIV	Website	NGO	
Report of the EU Expert Dialogue on Biofuels and REDD - Implications for Indigenous Peoples	Report	NGO/Gov	NCIV
NOREDD	Articles	NGO/Media	NCIV
FPIC	Report	GOV/NGO	NCIV
Indigenous Peoples	Report	NGO	Survival International
Website CGV	Website	Business	
Eneco Code of Conduct	Code of Conduct	Business	
UNFCCC	Website	Government	
Australian Government Initiatives	Website	Government	
Factsheet Indonesian-Australian Partnership	Factsheet	Government	
Vrom	Report	Government	
Nederlandse inzet bij internationaal duurzaam bosbeheer	Report	Government	

Friends of the earth report	report	NGO
FOE report	report	NGO
forestry congress	meeting	Government
WWF on REDD	article	NGO
GFC letter	letter	NGO
negative media coverage on CGV	article	media
Harko Koster, WWF	Questionnaire	NGO
Forestindustries.eu	article	Business
video on indigenous rights	video	NGO
Fons Gribling	Interview	Government
Face the future	Questionnaire	NGO
NGO letter	letter	NGO
FERN video	video	NGO
UN-REDD Q&A	Q&A	Gov
Article on Blairo Maggi	Article	Media
Website Face the Futures	Website	NGO
Margaret Skutsch	Questionnaire	Academic
WWF report	Report	NGO
Jos Cozijnsen	Interview	Business

Appendix F. Information on Respondents

Questionnaires

Sphere Civil Society NGO

Organisation Survival International

Role Survival is an NGO working for tribal peoples' rights worldwide. They work with hundreds of tribal communities and organizations.

Website www.survivalinternational.org

Sphere Civil Society NGO

Name Leo van der Vlist

Organisation NCIV

Role NCIV is an NGO that supports the promotion, recognition and protection of indigenous peoples' rights. NCIV brings the issues and views of indigenous peoples to the attention of the Dutch government, civil society, business and science and encourage them to make a positive contribution to improving the situation of indigenous peoples at national and international levels.

Website indigenouspeoples.nl

Sphere	Civil Society	Network
Name	Jeff Horowitz	Founder
Organisation	Avoided Deforestation Partners	
Role	Avoided Deforestation Partners is dedicated to advancing U.S. and international climate and energy policies along with business solutions that include robust incentives to protect tropical forests. AD Partners convenes public and private sector leaders to inspire decision makers to implement strategies that reduce deforestation. In the summer of 2008, AD Partners launched its REDD Methodology Project. The initiative has brought together a group of internationally recognized experts to develop a series of freely available methodology modules for advancing REDD projects.	
Website	www.adpartners.org	

Sphere	Civil Society	NGO
Name	Saskia Ozinga	Campaign Coordinator
Organisation	FERN	
Role	FERN was created in 1995 to keep track of the European Union's involvement in forests and coordinate NGO activities at the European level. Their work centres on forests and forest peoples' rights and the issues that affect them such as trade and investment and climate change.	
Website	Fern.org	

Sphere	Civil Society	NGO
Name	Justin Whalen	Project Manager
Organisation	Face the Futures	
Role	Face the Future is an organisation which is combating climate change through forestry projects. They are committed to creating sustainable forestry projects that also benefit local communities and biodiversity.	
Website	www.face-thefuture.com	

Sphere	Civil Society	Academic
Name	Dr. Margaret Skutsch	
Organisation	Twente Centre for Studies in Technology and Sustainable Development	
Role	Scholar with an expertise in development issues, particularly natural resource management and policy and author of numerous articles concerning REDD.	

Sphere	Civil Society	NGO
Name	Harko Koster	Forests Senior Advisor Latin America
Organisation	WWF	
Role	The WWF helps demonstrate REDD can work and ensures REDD policies are created with the right conditions. WWF also helps to build local to national to global bridges.	
Website	wwf.org	

Sphere	Market	Forest Sector Advisory
Name	Dipl.-Ing. Markus Sommerauer	Founder
Organisation	Forestindustries.eu	
Role	A business that offers management consulting services to clients throughout the forest products value chain, from resource providers to end users.	
Website	Forestindustries.eu	

Interviews

Sphere	Civil Society	NGO
Name	Adrian Enright	Project Manager for "Poverty and Sustainable Development Impacts of REDD Architecture", Vietnam
Organisation	SNV	
Role	SNV is a pro-poor development agency, an NGO that works across 32 countries globally. They have three major sectors. De first sector is renewable energy, the second one is water and sanitation. The third is forestry and agriculture, which includes value chains and more. SNV's REDD+ programme is slotted with the renewable energy area.	
Website	www.snvworld.org/en/redd	

Sphere	Civil Society	Knowledge Institute
Name	Herman Savenije	Programme Coordinator
Organisation	Tropenbos International	
Role	Tropenbos International (TBI) has established itself as an important platform supporting the forest and development agenda in developing countries. They have built a reputation for improving knowledge, personal capacity and institutional capacity for better governance and management of tropical forest resources. They operate partnership programmes between research institutions in the North and the South to build capacity that meets the needs of forest stakeholders.	
Website	www.tropenbos.org	

Sphere	Civil Society	Academic & Platform
Name	Ir. Arend Jan van Bodegom	
Organisation	Wageningen UR Centre for Development Innovation and Platform REDD+	
Role	Scholar with expertise in climate change, biodiversity and forest management, also the facilitator of the Dutch REDD+ Platform, which consists of people from the Netherlands that are involved in climate, forests and REDD+ and currently focuses most on exchanging experiences with REDD+.	
Website	portals.wi.wur.nl/cdmbos	

Sphere	Market	Energy Company
Name	Edit Kiss	Structured Origination Manager Carbon Desk - Alternative Energy
Organisation	Eneco	
Role	Eneco is an active purchaser of carbon credits for both its own use, and for 3rd parties with which it partners.	
Website	www.eneco.nl	

Sphere	Market	Ecosystem Conservation Company
Name	Ciaran Kelly	CEO
Organisation	Celestial Green Ventures	
Role	Celestial Green Ventures PLC (CGV) is an Ecosystem Conservation Company specialising in the development of REDD+ forestry projects. Each of CGV's projects is designed to be mutually beneficial partnerships between CGV and the Landowners. The objective is to protect the regions' natural living forests which are vulnerable to the devastation caused by illegal logging, mining, and slash & burn agriculture.	
Website	www.celestialgreenventures.com	

Sphere	Market	consulting attorney, energy & environment
Name	Jos Cozijnsen	Owner
Organisation	Emissierechten.nl	
Role	An independent consultant advising companies, NGO's and governments on the CO_2 market and its possibilities. Together with others he develops new market mechanism and concepts.	
Website	www.emissierechten.nl	

Sphere	State	Dutch Government
Name	Ir. Bas J.L. Clabbers	Senior policy advisor climate change
Organisation	Dutch Ministry of Economic Affairs, Agriculture and Innovation	
Role	The ministry is responsible for issues such as industry, trade, energy supply, innovation and entrepreneurship, agriculture, forestry, recreation as well as the quality of nature and food.	

Website	www.rijksoverheid.nl/ministeries/eleni	
Sphere	State	Dutch Government
Name	Fons Gribling	Senior Policy Adviser on Forests and Biodiversity
Organisation	Dutch Ministry of Foreign Affairs	
Role	The ministry of foreign affairs represents the Netherlands in international negotiations and together with other ministries, shapes the Europe of the future.	
Website	www.minbuza.nl	

Lists of Tables and Figures

List of Abbreviations

CDM	Clean Development Mechanism
CFM	Community Forest Management
CO2	Carbon Dioxide
COP	Conference of the Parties
EKC	Economic Kuznets Curve
FAO	Food and Agriculture Organization
FSC	Forest Stewardship Council
GNP	Gross National Product
ICDP	Integrated Conservation and Development Project
IISD	International Institute for Sustainable Development
LULUCF	Land Use, Land-Use Change and Forestry
MES	Markets for Environmental Services
MNC	Multinational Corporation
MRV	Measuring, Reporting and Verification
NGO	Non-Governmental Organisation
PES	Payments for Environmental Services
PESTEL	Political, Economic, Social, Technological, Environmental and Legal Factors
REDD	Reducing Emissions from Deforestation and Degradation
TEA	Tradable Environmental Allowances
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Reducing Emissions from Deforestation and Degradation
WCED	World Commission on Environment and Development
WWF	World Wide Fund

Acknowledgements

Hereby I would like to thank all the people that made the creation of this thesis possible. My coach Ingrid de Vries for stimulating me to write what would be used instead of desk drawer padding and my co-reader Shahzad Ansari for opening my eyes for the possibility to also add to academia. I would like to express my special thanks for all the kind people who took their time to answer my questions and who infected me with their enthusiasm for the topic even more. And finally, my friends and family who encouraged me to keep going, I owe thee many hugs and cups of tea.

Contact Information

In case of questions or comments, please contact:

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ilonajankovits@hotmail.com