APRIL Ecosystem Restoration Project: A sustainable model for Indonesian peatlands?

Michael Ceruti
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Michael Ceruti

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<th>Full Form</th>
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<tr>
<td>APRIL</td>
<td>Asia Pacific Resources International Limited</td>
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<tr>
<td>BAU</td>
<td>Business As Usual</td>
</tr>
<tr>
<td>CCB</td>
<td>Climate, Community &amp; Biodiversity</td>
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<tr>
<td>CFP</td>
<td>Community Forest Programme</td>
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<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<td>ERC</td>
<td>Ecosystem Restoration Concession</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FFI</td>
<td>Fauna &amp; Flora International</td>
</tr>
<tr>
<td>FPIC</td>
<td>Free Prior Informed Consent</td>
</tr>
<tr>
<td>FSC</td>
<td>Forest Stewardship Council</td>
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<tr>
<td>FVP</td>
<td>Forestry Village Programme</td>
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<tr>
<td>GDP</td>
<td>Growth Domestic Product</td>
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<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
</tr>
<tr>
<td>GOI</td>
<td>Government of Indonesia</td>
</tr>
<tr>
<td>HCVF</td>
<td>High Conservation Value Forest</td>
</tr>
<tr>
<td>HPH</td>
<td><em>Hak Pengusahaan Hutan</em> – Forest Logging Concession</td>
</tr>
<tr>
<td>HTI</td>
<td><em>Hutan Tanaman Industri</em> – Industrial Plantation Concession</td>
</tr>
<tr>
<td>NTFP</td>
<td>Non-Timber Forest Products</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Governmental Organization</td>
</tr>
<tr>
<td>RER</td>
<td><em>Restorasi Ekosistem Riau</em></td>
</tr>
<tr>
<td>SBMS</td>
<td>Kampar Science Based Management Support Project</td>
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APRIL Ecosystem Restoration Project: A sustainable model for Indonesian peatlands?

Michael Ceruti

Ceruti, M., APRIL Ecosystem Restoration Project: A sustainable model for Indonesian peatlands? Master thesis in Sustainable Development at Uppsala University, 67, 30 ECTS/hp

Abstract: The growth in global population and the unsustainable business as usual model adopted by private companies in managing land, are causing huge pressures on Indonesian natural ecosystems. The widespread peatland deforestation and degradation affecting Indonesia has been the leading cause of biodiversity loss, decrease of vital ecosystem services, land subsidence, fires and increased impoverishment of local communities. In response to this issue, the Indonesian government, supported by civil society and scientists, issued in 2004 the Ecosystem Restoration Concession license, a new approach of managing logged out production forests in order to reverse and restore deforested, degraded and damaged ecosystems. In 2013, the Indonesian second largest pulp and paper company, APRIL acquired this licence and launched one of the biggest and most ambitious restoration projects in the country, called RER. This project was implemented in the Kampar Peninsula, Riau province, Sumatra, a vast peatland area unique for its ecosystem services and its flora and fauna species. The purpose of this thesis was to investigate the sustainability of the project’s management, conservation and development model. Field observations and qualitative semi-structured interviews were conducted on various groups of stakeholders. The study showed that, although the project has generated various benefits, thus having the potential of exceeding the environmental, social and economic costs in the future, several challenges, such as managing land, providing alternative livelihoods and including the participation of local communities were reported. If these problems are not successfully addressed, they risk jeopardising the success of the project and therefore its opportunity of becoming sustainable and widespread.

Keywords: Sustainable development, Ecosystem Restoration Concession, peatland degradation, restoration, conservation, Kampar Peninsula, Indonesia

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**Summary:** The introduction of the Ecosystem Restoration Concession license from the Indonesian Government in 2004 was extremely important in order to restore and protect the last vital natural ecosystems present. This new way of managing land was supposed to allow license holders not only to halt one of the highest land deforestation and degradation rates, currently affecting Indonesia, but also to avoid dramatic consequences which could impact climate change mitigation measures. This study focused on assessing the sustainability of the restoration, conservation and management model adopted by a project called RER, which was launched in 2013 by APRIL Group, the second largest pulp and paper company of the country, together with other important NGO partners. The fieldwork was conducted in the Kampar Peninsula, a very important peatland area in Sumatra, which for decades has been heavily degraded. RER’s presence is overall considered beneficial for the environment despite the various criticisms. These criticisms regards both the adopted peatland management techniques and the insufficient involvement, transparency and inclusion of local communities. The purpose of this thesis was to investigate APRIL’s restoration and conservation project called RER and to answer the research question: if RER is a sustainable peatland management, conservation and development model. The results of this study showed, that RER, in order to become sustainable, needs, according to the various stakeholder groups interviewed, to improve its social aspects, to develop new ways of sustainable peatland management and to generate the necessary alternative livelihoods and benefit for the villages surrounding the project.

**Keywords:** Sustainable development, Ecosystem Restoration Concession, peatland degradation, restoration, conservation, Kampar Peninsula, Indonesia

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“Earth provides enough to satisfy every man’s need, but not every man’s greed”
(Mahatma Gandhi)

1. Introduction
The growth in global population and the unsustainable business as usual (BAU) model adopted by many private companies in managing land, have placed huge pressures on the world’s natural resources and ecosystem services they provide (GCP, 2015). One of the main global challenges which today’s societies are facing is changes in land use. Particularly, deforestation and peatland degradation represent crucial environmental problems which affects several regions across the world threatening long term sustainability of these important natural resources (UNEP, 2001). Forests cover 30% of the world’s land surface and are one of the world’s largest carbon sinks, absorbing 2.4 billion tonnes of carbon dioxide (CO$_2$) each year and storing billions more (Page, 2010). Apart from carbon storage contributing climate change mitigation, the true benefits of reducing deforestation and forest degradation lie in protecting and enhancing many other environmental, economic and social benefits that forests bring (Smith, 2012). Just like forests, peatlands, present in the boreal, temperate and tropical regions, represent globally important terrestrial carbon pool ecosystems and they regulate vital carbon soil-atmosphere exchanges (Smith, 2012). On the other hand, their degradation leads to a substantial release of CO$_2$ and methane (MH$_4$) into the atmosphere thus exacerbating the climate change effects and impacts (Page, 2011).

The most rapid degradation of tropical peatland along with deforestation events is currently taking place in Southeast Asia, in particular in Indonesia: this phenomenon has been caused by the strong economic and social pressures created by a fierce demand for timber, land for agriculture and industrial tree plantation developments (Geist & Lambin, 2002; Hermosilla & Chip, 2005; Margono et al., 2012;). As a result, this rich tropical forested and peatland region has undergone significant changes in the last 2 decades linked to widespread deforestation, drainage, land subsidence and frequent and intense fires (Page, 2011; Indrarto et al., 2012; Casson et al., 2014). These changes have led to extensive emissions of greenhouse gases (GHG) into the atmosphere, increased losses of forest cover, biomass and biodiversity, as well as microclimate changes visible in variations of the rainy patterns, peat oxidation and combustion (Geist & Lambin, 2002; Hooijer et al., 2010; Indrarto et al., 2012; Casson et al. 2014)

Tropical forests and peatlands are extremely sensitive, especially to changes regarding temperature and precipitation. Particularly prolonged periods of drought can turn peatlands from being carbon sinks into carbon sources. As the largest Southeast Asian country, Indonesia is currently facing significant challenges linked to both peatland and forest land changes and the government has to deal with the consequences caused by years of widespread unsustainable land management, in order to protect the remaining areas of these ecosystems (Hooijer et al., 2010; Page, 2011; Rydin & Jeglum, 2013)

In response to this, the Indonesian Ministry of Forestry launched in 2004 a new approach to manage land through the release of Ecosystem Restoration Concession (ERC) licenses with the aim to support efforts to return deforested, degraded and damaged ecosystems to their “biological equilibrium” (MoF, 2004; Walsh et al., 2012; Buergin, 2016). Before focusing on the ER concept adopted by Indonesia as the main subject of my research thesis, in the next section I will provide short information on what peatlands, tropical rainforests and peat swamp mean.
1.1 Tropical rainforest, peatland and peat swamp forest

**Tropical rainforest** is defined as a forest usually composed of tall, densely growing, broad-leaved evergreen trees in an area characterised by a high annual rainfall (Dictionary, 2016) (See Figure 1). Forests growing in tropical regions vary widely in composition, structure, function and productivity because of the diversity of important environmental factors, such as type of climate, soil and bio-geographic conditions where the trees grow (FAO, 2013). Tropical rainforests currently cover less than 6% of Earth’s land surface but produce 40% of Earth’s oxygen (YPTE, 2016). The world’s largest tropical rainforests are located in South America, Africa and Southeast Asia and grow in warm and steamy environments containing a huge variety of plants and species. This ecosystem plays a crucial role in providing multitude services ranging from climate mitigation (since it stores great quantities of CO$_2$ and regulates the water and carbon cycle) to providing food and shelter for many key wildlife species as well as the indigenous communities (Geist & Lambin, 2002; Page, 2011; Indrarto et al., 2012; Casson, 2014). They also contribute with medicines, that we use on a daily basis, and many industrial products such as rubber, resins and fibres. It is also home to over half the world’s species and the livelihoods of millions of people are strictly dependent to this ecosystem (Rainforest Alliance, 2016)

![An example of tropical Rainforest. Source: Rainforest Action Network, 2016](image)

However, in the last 200 years, the total area of rainforest has heavily decreased passing from 1,500 million ha to less than 800 million ha (YPTE, 2016). The deforestation rate has accelerated during the latter part of the 20$^{th}$ and the 21$^{st}$ century, due to several reasons such as: population growth, increased demand for land and timber, cattle grazing, soya plantations, pulpwood and industrial crops plantations, mining and hydroelectric dams. Ongoing processes are destroying this ecosystem thus affecting the vital services produced and especially influencing the planet’s climate: by absorbing about 20% of the world’s man-made CO$_2$ emissions, this ecosystem represents a crucial carbon sink which can easily turn to a carbon source when it is deforested and burnt. Burning the rainforest not only leads to release
of huge amounts of CO$_2$ into the atmosphere, but it also reduces its ability to absorb CO$_2$ and produce oxygen (YPTE, 2016).

**Peatlands** are wetland ecosystems characterized by the accumulation of organic matter, which is produced and deposited at a greater rate than it is decomposed, leading to the formation of peat (Paavilainen & Päivänen, 1995; Rydin & Jeglum, 2013). Peatlands are a combination of plant remains (10%) and water (90%) and especially in the Southeast Asian ones, abiotic and biotic factors are completely interdependent. The morphology, soil and hydrology are shaped by the vegetation through accumulation of organic material and this vegetation is the result of the fine balance between those environmental components (Paavilainen & Päivänen, 1995; UNDP, 2006; Rydin & Jeglum, 2013).

If this balance is kept untouched, this type of ecosystem, currently covering an estimated area of 400 million ha worldwide, plays a fundamental role as a carbon sink and main regulator in the carbon cycle between the earth’s surface and the atmosphere. Peatlands also store many other GHGs such as nitrous oxide (N$_2$O) whose emissions, in a natural state, are usually low but in conditions of peatland disturbance they turn into high. The peatland services which society benefits from include water flow regulation (water storage, filtration and supply), erosion prevention, flood mitigation, macro-climate stabilization, energy resources, hunting grounds and food products for indigenous communities (UNDP, 2006; Page, 2011).

However, land use change is currently responsible for shifting this delicate balance in peatlands, with its components being compromised and thus affecting the rate of peat accumulation, implying drastic consequences in the long term. Land subsidence – the lowering of peat soil, due to compaction and consolidation, increased GHG and methane emissions and production loss are only some of the main negative impacts resulting from this loss of balance (Hooijer et al., 2010; Page, 2011; Rydin & Jeglum, 2013). Human intervention is the main reason behind this balance shift, causing huge impacts on the peatland hydrology and triggering a rapid transformation of the landscape structure and functions, if appropriate water management is not implemented (Paavilainen & Päivänen, 1995; UNDP, 2006;).

Indonesia hosts around 22 million ha of peatland – 11% of its total land area – which is mainly distributed in three main islands: Sumatra (over 7 million ha), Kalimantan (5.8 million ha) and Papua (7.9 million ha) (Casson et al., 2014).

**Peat Swamp Forest:** In Southeast Asia majority of peatlands are covered by forest and they are named peat swamp forests (See Figure 2). In Indonesia, peat swamp forests are not the only peat variety present but are accompanied by a series of other forested and wooded ones, mainly depending on the areas and regions in which those are located. Those are: Mangrove woodlands, Padang, ombrogenous bog with good tree development and Padang, ombrogenous bog with poor tree development. Despite those several types of peat ecosystems present in Indonesia, my thesis focuses on peat swamp forest in Kampar Peninsula, in Riau province, Sumatra (Paavilainen & Päivänen, 1995; UNDP, 2006; Rydin & Jeglum, 2013).

Peat swamp forests are an important component of the world’s wetlands which represent the dynamic link between land and water, a transition zone where the flow of water, the cycling of nutrients and the energy from the sun combine to produce a unique ecosystem of a waterlogged forest growing on a layer of dead leaves and plant material which usually
reaches 20 metres of thickness. It comprises unique conditions characterised by water-logging, with low nutrients and dissolved oxygen levels in acidic waters (Rydin & Jeglum, 2013).

Peat swamp forests provide a variety of benefits in the form of forestry and fishery products, energy, flood mitigation, water supply and groundwater recharge (UNDP, 2006). An important aspect related to the survival of this crucial ecosystem is its dependence on a naturally high water level which prevents the soil from drying up, thus exposing combustible peat, which causes the release of carbon in the form of CO$_2$ into the atmosphere (UNDP, 2006). The environmental conditions present have favoured the evolution of many unique species of flora and fauna which are very fragile and sensitive to external disturbances (Paavilainen & Päivänen, 1995; UNDP, 2006; Rydin & Jeglum, 2013).

Overall, the loss of peatland habitat in Indonesia is critical: in central Kalimantan it is reported at being around 3.2% per year while on Sumatra Island this percentage is even higher. This is mainly caused by the clear-cutting of tropical forested peatlands which is a common practice in Indonesia and threatens to reduce biodiversity and increase flooding events (Geist & Lambin, 2002; Hooijer et al., 2010; Margono et al., 2012). In addition to this, the widespread conversion to industrial tree and crop plantations is causing widespread peatland deforestation and degradation. Furthermore, due to the inadequate knowledge of peatland hydrology, these land use changes may lead to more challenging living conditions instead of bringing improvements in livelihoods (Geist & Lambin, 2002; Hooijer et al., 2010; Page, 2011; Casson et al., 2014).

In my thesis, I will simplify the many definitions given and label the many types of aforementioned forested peatlands under the generic term of peatland.

2. Overview of Indonesia’s peatlands and forests
Indonesia, with over 13,466 islands and an estimated population of 252 million people represents the fourth most populated country in the world along with being considered the third largest forested nation on the planet (Lauder, 2013). It is estimated that Indonesia’s forests and peatlands are among the most biologically diverse ecosystems on earth: by only occupying 1% of the Earth’s land area and hosting 15 different natural forest types, the

![Figure 2: Indonesian peat swamp forest land in the Kampar Peninsula area. Source: Greenpeace, 2014, Ceruti, 2016](image-url)
country provides habitats for 17% of the world’s bird species, 16% of reptiles and amphibians, 12% of mammals – including key wildlife and critically endangered species such as the Sumatran tigers and rhinos together with the orang-utans and 10% of the plant species (Indrarto et al., 2012; Casson et al., 2014; RaN, 2016).

Between 6 and 30 million Indonesians are strictly dependent on the services produced by these rich ecosystems which have become crucial for Indonesian economic and social development (Idrarto et al., 2012; Sunderlin et al., 2000). Since Indonesia is a developing country, the government is highly dependent on the forestry sector. However, it is also dependent on sectors such as agriculture, estate crops and mining that require deforested land. This has led to a continuous forest exploitation causing high deforestation and peatland degradation rates (Idrarto et al., 2012).

The political changes that occurred within the Indonesian government in 1966, in particular passing from the old Soekarno (1945-1966) regime to the Soeharto one (1966-1998), brought the launch of several development programs within the forestry sector (Hidayat, 2015). These new policies aimed at improving Indonesian’s lives both economically and socially through the exploitation of the national resources. One way of achieving this, was when the Soeharto regime declared that customary forests would become state forests, in which the Department of Forestry had the authority to “sell” forestlands to private investors and forest conglomerates (Gunawan, 2004; Hidayat, 2015). In addition to this development, the Government of Indonesia (GOI) also launched, in the early 1980s, an ambitious plan to establish a strong pulp and paper industry thus introducing the “Industrial Timber Plantations” concession (Hutan Tanaman Industri- HTI) with the aim to promote the establishment of monocultures of pulpwood plantations, particularly in Sumatra and Kalimantan (Hidayat, 2015).

These policies has resulted in a rapid increase of the country’s economic growth and Gross Domestic Product (GDP), but it has also triggered significant environmental and social problems, such as widespread deforestation and conflicts over forest land rights (Hidayat, 2015).

2.1 Indonesian peatland fire, deforestation and degradation

In the last decades, Indonesia has shown one of the highest deforestation rates in the world reaching 1.5 Mha in 2014 (GFW, 2016). According to the Food and Agriculture Organization of the United Nations (FAO) data (2015), 61.6% of the GHG emissions in the country came from forest and land-use change. This is a crucial aspect for Indonesia to consider since the GOI has pledged to cut GHG emissions by 26% by 2030 (UNORCID, 2015). More than 100 thousand ha of peatlands are destroyed each year and 85% of Indonesia’s GHG emissions stem from land-use activities, including 37% due to deforestation and 27% due to peat fires (Moss, 2015). Peatland destruction and loss rates differ from region to region within Indonesia, although they present a general increasing trend: between 2000-2010, among the six areas listed in Table 1, Sumatra clearly experienced the highest peatland degradation and deforestation rate ending up losing over 40% of its peatland during last decade due to the widespread presence of “logging concessions” (Hak Pengusahaan Hutan - HPH) and HTI concessions along with illegal logging, peatland fires and slash-burn activities (Miettinen et al., 2011). This has led to high biodiversity loss, increased CO₂ emissions, unproductive land for future generations and widespread poverty across the area.
Table 1: Peatland degradation and loss over 10 years in Southeast Asia. Source: Miettinen et al., 2011.

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<tbody>
<tr>
<td></td>
<td>1000 ha</td>
<td>%</td>
<td>1000 ha</td>
</tr>
<tr>
<td>Peninsular Malaysia</td>
<td>287</td>
<td>2.2</td>
<td>235</td>
</tr>
<tr>
<td>Sumatra</td>
<td>3131</td>
<td>7.2</td>
<td>1839</td>
</tr>
<tr>
<td>Borneo</td>
<td>4182</td>
<td>5.7</td>
<td>3144</td>
</tr>
<tr>
<td>Java</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sulawesi</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>New Guinea</td>
<td>6336</td>
<td>17.0</td>
<td>5970</td>
</tr>
<tr>
<td>Sabah, Sarawak, and Brunei</td>
<td>943</td>
<td></td>
<td>438</td>
</tr>
<tr>
<td>Kalimantan</td>
<td>3239</td>
<td></td>
<td>2706</td>
</tr>
<tr>
<td>Indonesia</td>
<td>12740</td>
<td>6.9</td>
<td>10541</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1230</td>
<td>3.7</td>
<td>673</td>
</tr>
<tr>
<td>Total study area</td>
<td>13970</td>
<td>6.4</td>
<td>11214</td>
</tr>
</tbody>
</table>

Particularly, peatland fires are a critical disturbance factor that has huge ecological impacts on ecosystems, influencing their vegetation structure, soil composition and water flow. Indonesia, but even the whole Southeast Asian region, has experienced, throughout history, several occasional wildfires. Those can at times occur naturally, although one of the main reasons lie on the use of fire by landholders as a way to convert forests into agricultural land: this practice repeated annually has caused the destruction of thousands of hectares of peatlands for palm oil and pulpwood plantation purposes (Hooijer et al., 2010).
Peatlands are drained by plantation growers through the construction of several canals that collect water from all over the peatlands and reverse it into a bigger river or directly into the sea. This drains the peat, thus decreasing the water table and emitting highly combustible carbon into the atmosphere. After the drainage phase, the peat soil is burned, especially by farmers, with the intent to reduce the acidity levels present and therefore creating better conditions to grow rice paddy-fields (Hooijer et al., 2015). However, sometimes those “controlled” fires become uncontrolled causing widespread fire hotspots and haze which have crucial ecological, social and economic consequences (See Figure 3). The responsibility of fires cannot be attributable only to farmers or local villagers since there is scientific evidence which shows that in the last 15 years, 99% of the fires were detected inside private concessions (Hooijer et al., 2015).

![Figure 3: Active fire hotspots and consequent haze across Indonesia in September 2015. Source: ABC News, 2015](image)

According to the governmental data collected on the 2015 fires, over 100,000 man-made fires occurred between June and October in Indonesia with an estimated 2.6 Mha of land being burned (WB, 2015). This and associated haze problems, have been declared internationally “the biggest environmental crime of the 21st century” with dramatic environmental, social and economic consequences. In addition, Indonesia periodically experiences forest and peatland fires due to a combination of El Nino-induced draught events and anthropogenic land use changes (Marlier et al., 2013).

According to the World Bank (WB) study (2015), from June to October 2015, deliberate man-made fires and haze crisis have cost Indonesia an estimated USD 16 billion equivalent to 1.9% of the 2015 GDP. This amount includes economic losses and resulting costs in many strategic sectors with huge repercussions on agriculture, forestry, transport and tourism. In addition, costs to the environment amounted to USD 4.3 billion. The fires during this period also caused the death of 19 people while more than 500,000 cases with acute respiratory infections were reported (WB, 2015).
2.2 The ecosystem restoration concession

In response to the above mentioned problems linked to peatland deforestation and degradation and increasing pressure from transnational and national nature conservation organisations along with the scientific community, the Ministry of Forestry (MoF) in 2004 launched a new approach to manage logged out production forests, through the release of Ecosystem Restoration Concession licenses (ERC), with an aim to reverse and return deforested, degraded and damaged ecosystems to their “biological equilibrium” (Walsh, et al., 2012). This innovative policy is very important because, for the first time in Indonesia, production forests can be managed by companies or groups of environmental NGOs for conservation and restoration purposes rather than only for production. The Ministerial Decision on Ecosystem Restoration in Production Forests (IUPHHK-RE) defines restoration as “management with the objective of returning the biological (trees, wildlife) and non-biological (water cycling, carbon cycling) elements of the forests to their natural balance” (Walsh, et al., 2012).

Businesses and NGOs are able to acquire those ERCs only after rigid controls from the MoF, for a duration of 60 years and with the possibility to extend them only once for another 35 years; once those are obtained, license holders must maintain, protect and restore the environment through several methods such as native tree plantations and the reintroduction of fauna and flora species which have previously become locally extinct. As aforementioned, in the past the MoF only issued concessions such as HPH and HTI which implied respectively, selective logging, forest plantation development (e.g. pulpwood, rubber, teak), or conversion to agriculture use (e.g. oil palm). Through the issue of the ERC license, license holders are not allowed to extract timber from degraded forests until biological balance is achieved. (The differences between the HPH & HTI and the ERC license are reported in Table 2).

In addition to environmental requirements, the ERC concept also implies that there should be an equitable sharing of the benefits developed with local communities surrounding the concession and this could be achieved through job creation and alternative economic activities and incomes developed.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Regular HPH &amp; HTI Concessions</th>
<th>Ecosystem Restoration Concession (ERC)</th>
</tr>
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<tbody>
<tr>
<td>Protection</td>
<td>Protection</td>
<td>Protection</td>
</tr>
<tr>
<td>Planting</td>
<td>Enrichment and habitat management</td>
<td></td>
</tr>
<tr>
<td>Harvesting</td>
<td>Reintroduction of native flora and fauna, re-vegetation &amp; re-population and habitat management</td>
<td></td>
</tr>
<tr>
<td>Marketing of timber products</td>
<td>Area can be used concurrently with non-timber forest product utilisation and environmental services permit</td>
<td></td>
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</table>

*Table 2: Comparison and differences between the HPH and HTI concessions and the new ERC licensees. Source: MoF, 2008*

The ERC policy not only brings restrictions to license holders but also many potential benefits, for instance, they may generate income by producing and selling Non-Timber Forest Products (NTFPs), or by cultivating mushrooms, medicinal and ornamental plants, bee
keeping and animal-raising, or valuing in monetary terms the many ecosystem services produced (Buergin, 2016).

Moreover, many industrial plantation companies utilize the ERC license opportunity to compensate their impacts on the environment, improve their image and commit to different initiatives, such as the deforestation free supply chains. The private sector is slowly realising the importance of adopting a sustainable and regulated land use and ecosystem management scheme; both internal and external assessments have shown, over the years, how businesses can benefit from that in terms of reduced costs and increased profits (Walsh et al., 2012; Buergin, 2016). For example, if a sustainable management and conservation program is developed, risks such as illegal logging, fires, encroachments and habitat destruction would significantly decrease along with the financial threats that those activities bring to companies in both the short and long term (Walsh, et al., 2012)

However, several challenges have been faced during the implementation of the policy and the rapid expansion of ERC concept across the private sector. For instance, licensing fees are high and initial investment costs regarding the first years are estimated to be around USD 14-18 million per license with low or no returns for the first 5-10 years (Walsh et al., 2012; Buergin, 2016). Since those are significant economic investments especially for local environmental and social NGOs which are interested in acquiring an ERC licence, they are often obliged to look for additional funds from different sources and sectors. Also, there is insufficient transparency regarding the designation of areas destined for ER Cs, as well as an unclear and disputed role of provincial and district governments during the licensing issuing process (Buergin, 2016). In addition, the requirements for the permits are expensive and intricate and there is lack of fiscal incentives from the government. Moreover, many social conflicts have been registered between the ERC licence holders and local communities: these disputes usually concern land tenure rights, absence of a “Free Prior and Informed Consent” (FPIC), lack of inclusion of local communities, low economic compensation rates, no alternative economic incomes and low benefits to local people (Walsh et al., 2012; Buergin, 2016). From an ecological perspective, the main obstacle is usually represented by the levels of degradation before the concession license for a specific area is issued, which makes it impossible to restore, although a high amount of funds and resources are invested.

The ERC implementation is particularly crucial for the Kampar Peninsula, in the Riau province, on east coast of central Sumatra, as this area, with its over 700,000 ha of peatlands, hosts some of the biggest peatland across all Indonesia followed by the presence of unique species, such as the critically endangered Sumatran tigers (WWF, 2008) (Figure 4). Because of the special nature of this area, in May 2013, the ecosystem restoration and conservation project called RER (Restorasi Ekosistem Riau) was launched in the Kampar Peninsula by the Singaporean pulp and paper giant company Asia Pacific Resources International Limited (APRIL-RAPP) in partnership with NGOs Fauna & Flora International (FFI) and Bidara. This project adopts a landscape approach to promote a regulated, controlled and more sustainable land management leading to conservation of crucial ecosystem services and key wildlife species, while at the same time encouraging alternative economic development of the area (RER, 2016).
2.3 APRIL’s ecosystem restoration project RER

APRIL Group acquired the ERC license, in 2013, with an initial investment of USD 17 million for the first 20,265 hectares completely dedicated to restore and protect the peatland in the Kampar Peninsula. This significant peatland area was once considered as an impenetrable water-land but in the last decades it became an important source of timber for local communities and logging companies (Miettinen, 2009). Since the 1970s, the majority of the Peninsula has been handed out to a number of companies as logging concessions (HPH) or industrial tree plantations (HTI) which have caused one of the fastest peatland deforestation and degradation rates in Indonesia (Forest Peoples Programme, 2009).

The RER project currently occupies around 150 thousands ha of land and it is surrounded by the HTI concessions, which according to the company, serve as buffering zones, preventing outsiders from entering the area under the RER concession and causing different levels of encroachment. The various villages are located on the opposite bank of the Kampar River and
for decades, they have accessed to the Peninsula peatland and have used its natural resources and services (The RER concession area, the HTI plantations and the villagers can be seen in Figure 5 and 6).

Although obtaining the ERC license by a large pulp and paper company might have been considered as a sign of hope that triggered off a significant change in their business approach, in reality it was initially greeted by a widespread scepticism and criticism from civil society and scientific communities and considered as a “greenwashing” or “land grabbing” attempt (EOF, 2012; Parker, 2012; The Jakarta Globe, 2015). This was related to the negative image given to the company APRIL Group, since it was accused by several environmental NGOs (Eyes of the Forest, 2014; Miettinen, 2009) to be responsible for the clearance of High Conservation Value Forests (HCVF) and of peatland drainage and conversion to Acacia plantations (EOF, 2014). There are no precise calculations regarding APRIL’s historical deforestation, although it is estimated that at least over 595,000 ha of natural forest inside the Riau concessions alone have been cleared since the start of its operations (See Figure 7).
Despite the bad reputation surrounding the company, APRIL has shown, in the last years, a strong commitment to shifting towards a more environmentally, socially and economically sustainable approach. The RER project, the 2015 “Sustainability Forest Management Policy 2.0” and the Fire Village Programme (APRIL Dialogue, 2016) are only some of the many initiatives this company has recently undertaken. This change can be attributed to the change of the chair, from the founder of APRIL with over 40 years of experience in the pulp and paper sector, to his son. This crucial change has probably resulted in a mind-shift on how business should be conducted towards embracing sustainability criteria in the business model. The current business vision of the company follows the 4 C’s approach: good for the Community, good for the Company, good for the Country and good for the Climate (interviewee 1, Annex B).

RER represents the main project to which APRIL is applying its Sustainable Forest Management Policy 2.0: APRIL Group provides financial, technical and resource assistance in order to support the restoration and long-term protection of the area. During the three years from the launch of RER, APRIL has extended the project’s area to reach the current 150,000 ha to restore and protect. RER is part of a long-term investment in sustainable forestry and contributes to APRIL 1-for-1 commitment (Prnews, 2015; Interviewee 1), which consists of managing and protecting a hectare of High Conservation Value (HCV) forest for every hectare of plantation. In order to achieve this, RER employs a four-phase model based on a comprehensive plan that meets the Climate, Community & Biodiversity (CCB) standards (RER, 2016; Indonesia Cop21, 2015; Interviewee 1) (See Figure 8). Those are:

Protection: RER is adopting protection strategies ranging from the establishment of security guards, through patrolling each access area, to community resource management and protection schemes. In addition, RER works with local community groups to ensure that solutions are practical and effective.

Assessment: Assessing the ecosystem and especially the current conditions of the flora, fauna and wildlife habitats is one of the main tasks of this phase. RER states that initial assessments of the restoration area are currently underway although the social ones are
already completed. This phase also ensures that communities surrounding the Peninsula are included in the assessment process.

**Restoration:** After the first two phases are achieved and completed, RER will carefully restore the degraded sites through a process of restocking, using seedlings from surrounding forests but also by reintroducing flora and fauna species previously extinct and establishing nurseries to cultivate the seedlings collected from the wild. RER is also working to assure that water level restoration is achieved in order to maintain water levels critical to the health and functioning of the peatland ecosystem.

**Management:** In order to ensure the sustainability of the restored forest areas, RER ensures to develop long-term management plans and programs with the help and the consultation of an advisory panel composed of international and local specialists. As a result, RER believes it is fundamental to have consultation with local communities, the government, adjacent forest concession license-holders and civil society.

Although RER, if it follows its four-phase model, has a large potential of delivering a great amount of benefits, in just 3 years from its start, it has already faced several challenges such as social tensions with local communities and continuous criticisms from environmental NGOs.

**3. Research aim and scope**

The purpose of this thesis was to evaluate APRIL’s restoration and conservation project called RER to answer the main research question: whether RER is a sustainable model for
peatland management, conservation and development. The study focused on the Kampar Peninsula – Riau, Sumatra, covering 700,000 ha of peatland (Mizuno et al., 2016). Restoring peatlands has assumed a significant importance in Indonesia in recent years and the decision to use RER as my case study analysis was a result of the three following reasons:

i. The limited investigation so far undertaken on this project

ii. The large opportunity of generating widespread benefits across an area that for years has been significantly degraded

iii. The interesting debate surrounding the significant investment made by APRIL to restore the environment and the overall negative reactions of sceptical NGOs’ which defined it as a “land grabbing” or “green-washing” project.

Through the theoretical framework adopted, my research highlighted the levels of engagement of RER regarding crucial issues, such as local community participation, sustainable peatland management and social development. In addition to answering my research question, the research also allowed me to make further assessments on the challenges, the benefits and the impacts generated by the RER project on the ecological, social and economic aspects.

4. Theoretical framework

4.1 Sustainable development concept

In the last decades, terms such as “sustainable development” and “sustainability” have greatly dominated several environmental and development discourses and decisions affecting the environment, society and economy we live in. The most well-known definition of sustainable development is attributed to the Brundtland Report, issued in 1987, which states that “[sustainable development] is a development that meets the needs of the present without compromising the ability of future generations to meet their needs” (WCED, 1987). Since this definition was given, an increasing number of interpretations and meanings were made by several authors. According to Ross (2009), the Brundtland’s definition of sustainable development is considered vague since it is based on the “weak sustainability” framework rather than the “strong sustainability” one. Weaker interpretations of sustainable development focus more on development, stating that man-made capital is more important than the natural one and can be interchangeable. However, according to many authors, in order to deal with complex environmental issues such as e.g. climate change, the second framework of “strong sustainability” should be fully implemented by the sustainable development concept (Ross, 2009; Davies 2013). This framework considers man and natural capital to be complementary, dependent and not interchangeable.

Modern conservation and ecological restoration projects refer to this second framework. The restoration of depleted or damaged natural capital systems, through a democratic and participatory decision making process, increases the well-being of the environment, of the community and of the future generations (Choi et al., 2008). The attempt by various authors to combine the three dimensions of sustainability concepts (ecological, economic and social) into one has generated, according to Dobson (1996) over 300 definitions of sustainability. Many authors have suggested that sustainable development is a holistic approach to improving the quality of both life and environment and where changes in any one domain (environmental, social and economic) have an impact on the other two (Torjman, 2000).
From a social perspective, in particular human well-being cannot be sustained without a healthy environment and a vibrant economy (Torjman, 2000). Such variety of approaches in literature indicate that a universally valid definition of sustainable development is absent (Brukas et al., 2014). Despite this lack of clarity, sustainable development has been considered the best solution to approach different environmental problems and is a pledge to make the relationship between man and nature more harmonious (Da Silva, 2014).

Consisting of three pillars (See Figure 9), sustainable development seeks to achieve, in a balanced manner, environmental protection together with social and economic development. Although sustainability is strongly linked to the notion of sustainable development, there are various theories which have begun to dissociate these two concepts, fostering the idea that not only development, but all human actions need to become sustainable both in terms of their means and ends (Da Silva, 2014).

Figure 9: The three sustainable pillars. Source: The sustainable leader.

In order to achieve sustainability, minimum levels of austerity, sobriety and simplicity must prevail, so that limits imposed by the availability of environmental resources are respected. Despite these valid definitions and concepts, many still consider nature as a mere source of resources and commodities to exploit. With regard to this, two main paradigms can be identified: eco-centrism and anthropocentrism (Kortenkamp & Moore, 2001).

Anthropocentrism is guided by the interest in maintaining human quality of life, health and existence. According to Eckersley (2003, p.51) this paradigm assumes a general “belief of a clear and morally relevant dividing line between humankind and the rest of nature, where humankind is the only or principal source of value and meaning in the world, and that nonhuman nature is there for no other purpose but to serve mankind” (Eckersley, 2003, p.51). This worldview makes individuals and organisations believe that they are an entity separated from the environment instead of being an integral part of it (Da Silva, 2014; Barter & Bebbington, 2010).

On the other hand, in the eco-centrism concept, nature assumes an intrinsic value which humans do not feel separated from but entirely integrated with and dependent on (Schultz, 2002). Quoting once again Eckersley (2003, p. 28) about eco-centrism: “theory values the all (or, at least some) of the multilayered parts of the biotic community, i.e., species, communities, ecosystems, for their own sake.”
Both the anthropocentric and eco-centric environmental attitudes express concern towards the environment and an interest in preserving nature and its resources, although the reasons behind environmental concern and interest are different (Da Silva, 2014). Both paradigms start from the idea of a humanity-nature dichotomy; however, in my thesis, I will also introduce Gladwin’s paradigm, the sustain-centrism one, which removes this existing division and promotes both human development and nature preservation.

4.2 Anthropocentric paradigm
The origins of the Anthropocentric paradigm can be traced back to several historical events such as the Scientific Revolution of the 17th century, the emergence of liberal social theory and the bias towards human dominion over nature that some see embedded in Western religion (Gladwin et al., 1995). As previously mentioned, the main concept behind this worldview is the evident superiority humans assume: this results in people viewing and valuing nature as a sole instrument to use and satisfy their needs and interests (Mackinnon, 2007). The standpoint “of a human-centered nature”, explicitly states that humans are the only entity of value and separated from all other living things which are there just to sustain humanity’s existence.

This perspective is also strictly connected to the current economic system based on continuous consumption, exploitation and economic growth. This economy is viewed as a system which is linear, closed and isolated from nature (Da Silva, 2014; Gladwin et al., 1995; Valente, 2012). People acknowledging this worldview consider growth as something positive where the greater it is, the bigger and more positive the outcomes are. This expansionist strategy and wealth are viewed to generate enough technological resources to assure environmental protection, reduce pollutant emissions, foster the adoption of cleaner technologies, alleviate poverty and improve the quality of life of the disadvantaged groups (Da Silva, 2014; Gladwin et al., 1995). Nature is viewed as something passive, with its natural resources considered inexhaustible and easy to substitute whenever they become limited by just using technology. The main assumptions of this paradigm rely on unlimited economic growth, consumption and free market, technological optimism, hierarchical structures, environmental exploitation, unrestricted consumerism and the environment seen as a machine (Barter & Bebbington, 2010) (See Table 3).

Although this paradigm is considered to be responsible for global environmental issues ranging from global warming, ozone depletion to deforestation and land degradation and loss of biological diversity, it still continues to prevail in several sectors of our society, although throughout history opposing visions, such as the eco-centrism, have developed and rapidly spread.

4.3 Eco-centric paradigm
In contrast to the anthropocentric paradigm, supporters of the eco-centric worldview attribute a non-instrumental value to nature, whose balance requires the restriction of damaging human activities and behaviours. According to Gladwin et al., (1995), nature and its components have a value that go far beyond the mere instrumental that human beings give. The planet is viewed as a complicated organism organised in a non-hierarchical system where its parts interact with each other and are entirely interconnected. The term eco-centrism was adopted by the proponents of the deep ecology, during the 1970s, assuming the core concept of considering the whole environment to have an intrinsic value (Galdwin et al., 1995, Da Silva, 2014).
Furthermore, the main ethical principle within this perspective is that there should be no interference with the natural evolution of the natural systems. Also, the notion that humanity occupies a privileged position in nature is highly rejected, since non-human nature is considered to have an intrinsic value which is independent from human values and human awareness (Da Silva, 2014). Thus, natural resources should be used exclusively to satisfy vital survival needs and human actions are retained correct when they do not alter and unbalance the integrity, stability and beauty of the ecosystems present in our planet (Da Silva, 2014; Gladwin et al., 1995).

Regarding the economic discourse, according to the eco-centric worldview, the economic sector should take into account that human well-being is a function derived from the Earth’s wellbeing and that material growth increases environmental and social costs. Therefore, the idea that economic growth makes humanity and the rest of nature richer is considered a false myth and the economy is seen as something integrated, inseparable and enclosed within the environment rather than completely independent from it (Gladwin et al., 1995; Barter & Bebbington, 2010; Valente, 2012; Da Silva, 2014;).

4.4 Sustain-centrism as a new environmental paradigm

As previously mentioned, the two opposing environmental paradigms, anthropocentrism and eco-centrism seem to cancel each other, since the former goes against the conservation of nature and the latter does not allow progress and social development (Da Silva, 2014). In an attempt to overcome this problem the sustain-centric paradigm has been developed and represents an emergent world view, where humans are guided by both the constraints imposed by the ecological environment and a moral compass which preserves the traditions and cultural values within and across generations (Gladwin et al., 1995). While a formal definition of sustain-centrism is not present in the literature (Valente, 2012), according to Gladwin et al (1995), this perspective considers the global ecosystem to be finite, to be materially closed, to be vulnerable to human interference and to have limited regenerative and assimilative capacities. In the sustain-centrism concept, individualism, typical of the anthropocentrism and eco-centrism views, is rejected in favour of collectivism where its ethics embrace the respect of political, civil, social, economic and cultural human rights (Da Silva, 2014) (see the differences between the three paradigms in Table 3).
Main assumptions of alternative environmental paradigms

<table>
<thead>
<tr>
<th>Anthropocentrism</th>
<th>Eco-centrism</th>
<th>Sustain-centrism</th>
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<tbody>
<tr>
<td>Unlimited economic growth, consumption and free market, technological optimism, hierarchical structures, environmental exploitation, unrestricted consumerism and the environment seen as a machine</td>
<td>Holistic balance and ecological integrity, steady state economics, technological pessimism, non-hierarchal participative decision making, humans seen as members of the environment, the environment having a moral, aesthetic and symbolic value rather than purely utilitarian one, post consumerism, knowledge being based on holistic, integrative and dialectic views and the environment considered as an organism in metaphor terms</td>
<td>Achieving a sustainable development, focusing on quality of life and reducing inequities, developing an economic framework that incorporates natural capital principles, a cautious treatment of technology, decision making that is hierarchical yet collaborative, humans considered as the stewards of the environment, green consumerism is pursued, knowledge is balanced between reductionism and holism and an overarching metaphor of the environment seen as a machine/system of life support.</td>
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Table 3: The differences between the main assumptions of the three environmental paradigms. Source: Barter & Bebbington, 2010

In the sustain-centrism paradigm, humans are obliged to respect nature and to not jeopardize its natural resources through their consumption thus, allowing present and future generations to have the same opportunity to use and enjoy the ecosystem services produced (Weiss, 1989; Gladwin et al., 1995). In line with this, current generations should secure equitable opportunities for everyone, especially for those coming from the poorest and the most marginalized fractions of society. From the economic perspective, this paradigm provides a view where a prosperous economy is strictly dependent on a healthy environment and where a green and fair economy is developed, which internalizes the various ecological and social externalities.

Sustain-centrism offers a vision of development which is both people centred (focused on improving human life conditions) and conservation based (consisting of maintaining the variety and integrity of non-human nature) (Gladwin et al., 1995). Sustainable development is viewed as a process or a way of achieving human development in an inclusive, connected, equitable, prudent and secure manner (as presented in Figure 10). Such development is reached by respecting the following five sustainability criteria:

1) **Inclusiveness:** Through this criterion, sustainability seeks to integrate and connect both the environmental and human systems in the present and future scenario. Sustainability must deal with and overcome specific human induced “driving forces” which are causing vast pressures on the environment, such as: population and economic growth along with, technological, attitudinal and behavioural changes. Ecological efficiency is not enough and this view must go beyond it and also include in its discourse the social and economic aspects. Through this criterion, sustain-centrism attempts to create a balance between the three sustainable pillars: environment, economy and society (Gladwin et al., 1995; Barter & Bebbington, 2010; Da Silva, 2014; Valente, 2012). In literature, the inclusiveness criterion is
divided into three frameworks: social inclusiveness; ecological inclusiveness; and relational inclusiveness (Gupta & Vegelin, 2016). The main principles of the first one are to ensure equity when opportunities for development are shared, include the knowledge of all, build capacity to enable effective participation, enhance protection for the poorest and engage all in the politics of development (Gupta & Vegelin, 2016).

The principles of the ecological inclusiveness are about adopting ecocentric limits from local to global level, build resilience and adaptive capacity, share rights, responsibilities and risks and involve all stakeholders. The goals for applying this framework are to achieve resilience to disasters and land ownership, sustainable water and land management, enhance resource efficiency and decouple growth from degradation (Gupta & Vegelin, 2016).

Regarding the last framework, the relational inclusiveness, the main principles to follow are to ensure that public goods do not become privatized or securitized, address discourses that focus on generating wealth and where growth takes place within an inclusive development program, ensure the global rule of law and constitutionalism and ensure accountability (Gupta & Vegelin, 2016). The main goals of this framework are to reduce inequality, address issues of bribery and corruption and promote peaceful and inclusive societies. In order to be considered inclusive and achieve the aforementioned goals, RER should apply the principles of the three inclusiveness frameworks. In this thesis, I used the inclusiveness criterion and its framework principles in order to evaluate if the various levels of information, inclusion, local participation, transparency, governance and social support were undertaken by RER in the case study area.

2) Connectivity: Sustainability also demands an understanding of the world’s problems as systemically interconnected and interdependent. The second criterion of the Sustain-centrism approach not only focuses on the environmental issues, but also on the interrelationships between environment and social related aspects, such as poverty, population growth, gender issues, overconsumption and ecosystem degradation. Additionally, the concept of sustainable development is based on the recognition that a nation cannot reach its economic goals without also achieving the social and environmental ones at the same time (World Resources Institute, 1994). According to Gladwin et al., (1995), social equity and environmental respect are two crucial requirements that can enhance global welfare. If sustain-centrism solely aims to achieve ecological health and integrity, disregarding the efforts to alleviate poverty, stabilize population and redistribute economic opportunity, as it happens in the eco-centric paradigm, it would produce only partial achievements (Gladwin, et al., 1995; Barter & Bebbington, 2010; Valente, 2012; Da Silva, 2014;). For this thesis, the implementation of the connectivity criterion aims at showing the levels of connection between the various aspects of the stakeholders involved; it was my intention to investigate if RER was protecting the environment while promoting social development of the Kampar Peninsula. In particular, I focused on analysing if RER was adopting APRIL’s Corporate Social Responsibility (CSR) guidelines, or if the presence of RER was improving the living conditions of the local people living next to the restoration project, if the connection between peatland degradation and drainage was affecting peatland management, and if conservation, economic development and sustainable peatland management was possible to achieve simultaneously in the RER project.

Equity: Within this criterion, sustain-centrism recognises that all human values depend on a healthy ecological, social and economic context. Fair and equal distribution of resources, both within and between generations, is viewed as the core dimension of the sustainable
development concept. It is important that sustain-centrism, through this paradigm, acknowledges the importance of achieving fairness, equity and justice and focus more on human actions and the related consequences it has on the environment which could greatly affect present and future generations (Gladwin et al., 1995). Both social and environmental equity have received more attention recently. It has been said that equity needs to be strengthened by conservation and restoration projects through the increase of pluralism, empowerment of disadvantaged groups and participation in the decision-making process (Torjman, 2000; UNRISD, 2014). Equity and poverty issues not only include economic or development dimensions but also social and environmental ones. For example, degraded environmental conditions affect the social and the economic ones and may contribute to poverty and human rights violation (UNEP, 2000; Reed, 2008). Related to that, I used the Equity criterion to assess if RER is respecting both human and non-human forms of life in its restoration and conservation model and if the potential restrictions caused by the implementation of RER in the area are causing a violation of social rights. Moreover, I attempted to investigate the relationship between the restoration project and the villages, and particularly the levels of fairness and transparency of the APRIL’s compensation process, the presence of benefits for every stakeholders and the respect of basic human rights.

3) **Prudence:** Through this criterion, sustain-centrism paradigm embodies the precautionary principle of being prudent against the complexity, unpredictability and uncertainty presented by ecological and human systems. These constraints demand precaution, reversible actions, safety margins and preparation for perpetual surprise (Costanza et al., 1993). Sustain-centrism calls for keeping life-supporting ecosystems and interrelated socio-economic systems resilient, thus limiting the impacts of human activities within the regenerative and carrying capacities bounds of the ecosystem (Gladwin et al., 1995; Barter & Bebbington, 2010; Valente, 2012; Da Silva, 2014). In this thesis, in line with the prudence criterion I analysed if any mitigation activities along with the precautionary principle were undertaken by RER, what medium and long-term planning was adopted by RER to restore the integrity of the environment, if alternative livelihoods were generated to local communities and if a community land management discourse has ever been initiated by RER.

4) **Security:** Security usually demands safety from chronic threats and harmful disruption. This means that sustainability, according to the sustain-centrism paradigm, implies no net loss of ecosystem and social system health along with the critical natural capital (e.g. biodiversity, ozone layer) (Gladwin et al., 1995). Efficient long term planning, which takes into consideration both the environmental and social aspects in a sustainable ecosystem management project, represents the key for the success of the project. For this thesis, I assessed if RER assures environmental, social and economic security in the case study area through a wise planning.

The theoretical framework I adopted is presented in detail on the Figure below (Figure 10). I used the above five sustain-centrism criteria to analyse the RER project, answer my research question and assess the impacts, the benefits and challenges brought by the presence of the project. For each criterion I developed a set of questions to be used during my semi-structured interviews.
Inclusiveness

Connectivity

Investigating if RER includes in its restoration other important aspects such as biodiversity conservation and alternative livelihoods for local communities.

Exploring if RER is adopting a holistic approach and to what extent the project is interconnected to the social and environmental aspects.

Equity

Determining if human and non-human rights are respected and if RER generates the same level of benefits and impacts.

Prudence

Comprehending what kind of mitigation activities, long-term planning alternative livelihoods and land management discourse has RER undertaken.

Security

Investigating if the future activities of RER will not jeopardize the environmental, social and economic aspects.

Outcome of Analysis:

1) To answer the thesis research question whether RER is a sustainable model for peatland management, conservation and development.

2) To evaluate the potential benefits and impacts generated by the presence of this project in Kampar Peninsula.

Figure 10: The five criteria of the sustain-centrism concept, how they were used in the analysis and the outcomes produced
5. Methods

5.1 Research approach
For this research, I used a qualitative case study approach (Baxter & Jack, 2008) that facilitates the exploration of a phenomenon within its context using a variety of data sources and methods. This way of researching ensures that an issue is not explored only through one lens, but rather through a variety of lenses which allow multiple aspects of the phenomenon to be revealed and better understood (Baxter & Jack, 2008). The case study research is thus relevant for studies with research questions that require an extensive and in-depth description of certain social phenomenon. A qualitative case study research, provides a set of information about the “human” aspect of a specific issue, therefore highlighting the contradictory behaviours, beliefs, opinions, emotions and relationships of the various stakeholders involved (Creswell, 2009).

The main difference between quantitative and qualitative methods lies on their flexibility, with the first ones being more rigid in their content and questions, while the second ones allowing a greater spontaneity and a less formal interaction between the researcher and the object of investigation (Mack et al., 2005). Through a qualitative research, within the semi-structure interviews, participants have the opportunity to respond more freely, elaborately and in greater detail to the open-ended questions asked.

5.2 Study area
The Kampar Peninsula was chosen as the case study area of this research project due to two reasons. The first one regarded the ecological importance of this peatland area, not only in terms of its richness in biodiversity, but also for many ecosystem services and other socio-economic benefits it provides. The second reason regarded the ecosystem restoration and conservation project, RER, launched in this area by APRIL, the second largest pulp and paper industry in the country, declared as the most promising restoration attempt historically ever made in Indonesia but also probably the most criticised by civil society.

The Kampar Peninsula is situated in the east coast of Sumatra, in the Riau Province. It is hydrologically the best preserved and largest peatland area left in Sumatra Island with about 700,000 ha of peat and up to 60% of original forest cover (See Figure 11). The Kampar Peninsula stretches along the north bank of the main river, named Kampar and until recently the area was only accessibly by boat (Forest Peoples Programme, 2009). Thanks to tropical rains and the flat terrain, the Peninsula has always been saturated with fresh water and, despite several large rivers draining it, it has kept its natural balance which retains the water-table near the surface, thus resulting in an enormous build-up of peat soils along with the preservation of over 2 billion tonnes of carbon (WWF, 2008; Forest Peoples Programme, 2009; Miettinen, 2009). However, this area, together with the whole Riau province, has been subject to fierce deforestation and degradation resulting in the conversion of many ha of peat into Acacia and palm oil plantations.
Due to the aforementioned reasons, the case study area has become the focus of an intense debate among the Indonesian society. It regarded the potential trade-offs between APRIL’s acacia plantations and its recently launched ecosystem restoration and conservation project RER. The presence of the pulp and paper company has been considered, by many, to be the largest current threat to the conservation of Kampar’s peat because it is seen to be responsible for the conversion and destruction of thousands of ha of natural peat (Miettinen, 2009). On the other side, the launch of the RER project by APRIL definitely shows a strong commitment made by the company in the attempt to change its BAU model into one that is more sustainable and responsible, with the potential to generate future ecological, social and economic benefits for the several stakeholders involved.

5.3 Semi-structured interviews
The research was based on semi structured interviews and field observations. The set of questions used for my semi-structured interviews were based on the five sustainability criteria (inclusiveness, connectivity, equity, prudence and security) developed from the “Sustainability centrism” paradigm which I adopted as my theoretical framework.

Case studies may focus on an individual, a group, or an entire community and may utilize a number of data-gathering measures, such as historical background, official documents and reports, in-depth or semi-structured interviews and participant observation (Berg, 1989). I adopted semi-structured interviews and participant observation to collect data in order to assess the sustainability of the RER project.

Semi-structured interviews are a widely used technique in qualitative case study research. Unlike formal interviews, typical of a quantitative research, which follow a rigid format of set questions, semi-structured interviews focus on specific themes approached in a conversational style providing frequently valuable information which had not been previously considered pertinent by the researcher (Kvale, 1996) Therefore in this type of interview,
questions are open-ended and unexpected, and relevant answers can be followed up with further questions to gain more information about a specific issue (see interview guide in the Annex I).

5.3.1 The interview design
Literature distinguishes three types of those qualitative interviews: (a) informal conversational interview, (b) general interview guide approach, and (c) standardized open-ended interview (Gall et al., 2003). For the purpose of this research, I chose to follow the interview guide approach, which, compared to the informal conversational one, is more structured but still very flexible (Gall et al., 2003).

The interview guide approach is a type of interview that allowed me to interchange the way I posed my questions, thus giving me the opportunity to learn more about the in-depth experiences of my respondents, about the topic under study and to better respect the criteria adopted in my theoretical framework (See Annex I). The informal environment where I undertook the semi-structured interviews, helped me to develop the necessary relationship with my interviewees so that I was able to ask follow-up or probing questions based on their responses to pre-constructed questions. I found this very useful because I could ask new questions or change them based on the participant responses to the initially structured ones allowing me to explore the more personal approach of each actor (Turner, 2010). With the aim of building a good general interview guide approach, I followed McNamara’s (2009) vision and recommendations. According to this author, the task for the researcher is to ensure that the same general areas of information are collected from each interviewee; this provides more focus than the conversational approach, but still allows a degree of freedom and adaptability in getting information from the interviewee.

In the present study which had a duration of eight weeks, qualitative face-to-face and Skype interviews were undertaken and used as the main source of data collection. The selection of the interviewees was done following Anol Bhattacherjee (2007) selection criteria: for a field study, it is preferable to choose interview respondents at different organizational levels and positions in order to gain contrasting perspectives on the phenomenon concerned. In addition, the interviewees’ personal involvement in the case study is crucial and their ability and willingness to answer is important for the success of the research. For my semi-structured interviews, the various interviewees selected were principally those who had a particular insight into, or opinions about, the topic under study (See interviewee list in Annex II). This resulted in identifying various actors and dividing them into four groups of stakeholders which belonged to: RER-APRIL Group, environmental and social NGOs, scientists and governmental officials and villagers or members of indigenous community. Regarding the villages, those were selected on the basis of their strategic location and the ones most affected by the presence of the RER project were chosen.

During the field study, I used a number of methods to find the targeted interviewees: accurate research and examination of each respondent’s profile and profession was made at the beginning in order to find the best stakeholders directly involved in my case study or sufficiently knowledgeable about it. In addition to that, local environmental NGOs allowed me to visit the various villages and local communities in the Kampar Peninsula and helped me to hire a translator who knew the villagers. A number of interviewees were also chosen using the snowball sampling, a method where interviewees recommend other potential actors that can meet the research selection criteria (Bhattacherjee, 2012). In the thesis, the
interviewees will be presented as anonymous, with only their professions or positions being mentioned.

5.3.2 Methodological challenges

In my study it is important to report or consider potential challenges faced while undertaking my research project. Particularly, the fact that my field survey was conducted in a rural area of a developing country such as Indonesia greatly contributed to these challenges. Several factors made the work of collecting field data very difficult, time consuming and challenging. Among these problems, the main one was the lack of availability of potential respondents who refused to be interviewed, either because of a lack of interest, or forbidden by the company or because they considered the issue to be too delicate. Moreover, during the interviews carried out with the available stakeholders, I could sense, at times, an atmosphere of tension (due to the respondent’s anger towards the project) or even fear (especially regarding the villagers who were suspicious and often reluctant to provide detailed information) (Cohen & Arieli, 2011). For this reason, the initial goal of having a high number of interviewees in order to have extensive data, was enormously challenged. With the assumption that every study, no matter how well conducted and constructed, has limitations (Simon & Goes, 2011), in order to overcome these potential adversities, I changed and restricted the initial aims of my research and focused on answering only one main research question: whether RER is a sustainable model for peatland management, conservation and development.

Prior to the start of my research, my desire was to deal with at least three aspects related to the project and answer three research questions, regarding: 1) the impacts of RER on biodiversity; 2) the impacts of the project on the local communities and why it was considered “green-washing” by civil society; and 3) the sustainability of the project itself. However, due to above mentioned challenges, it was not possible to collect data to answer all these questions, thus I limited the scope of my thesis.

The aim for a minimum number of qualitative semi-structured interviews, decided prior to the start of the research, was set at 20 although the most important aspect for me was the diversity of the interviewees, rather than the number. This allowed me to gain different perspectives from various stakeholder groups and a better understanding of the complexities and criticisms surrounding the RER project. Regarding the potential subjectivity biases developed during the research, I tried to maintain a neutral position and preserve my objectivity during the whole course of the research from the data collection to the conclusions.

Aside my personal impressions, another huge challenge was about accessing the study area which turned out to be very time-consuming, limiting and demanding, since I had to take an airplane, drive for 6 hours from the nearest town and take a boat to cross the main Kampar river. Other smaller but still relevant challenges were a lack of general information about the project itself, cultural differences (e.g. language barrier), but also legal, political and ideological constraints (e.g. local communities were at times reluctant to be in contact with foreigners), and a widespread presence of an atmosphere of distrust. Since those challenges were all contemplated at the start of my research, I managed to overcome them and apply the necessary mitigation measures outlined in the previous paragraph.

As half of the interviews were conducted with local communities and villagers that were not knowledgeable in English, a translator who knew the head of the three villages visited, was
hired. This meant that some of the technical pre-fixed questions were modified in their content in order to make them more understandable to those who were not knowledgeable enough to certain language technicalities. Moreover, this method implies that a translator can affect the questions posed by the researcher and the consequential answers, therefore causing a loss of possible data.

5.3.3 Interview analysis
A total of 20 interviews (See Annex II), with a duration ranging between 50 and 60 minutes each, were conducted. Interviews were recorded, transcribed and analysed and a number presented in brackets () is associated to each interviewee who provided relevant information. There are two fundamental approaches used to analyse the qualitative data collected: the deductive and the inductive approach. The first one involves using a structure or predetermined framework to analyse data. Essentially, the researcher imposes their own structure or theories on the data and then uses these to analyse the interview transcripts. Conversely, the inductive approach involves analysing data with little or no predetermined theory, structure or framework and uses the actual data itself to derive the structure of analysis (Gill et al., 2008). The approach I chose to follow was the deductive one where my interviews were structured and categorized using the five criteria of the theoretical framework (See Annex I)

5.3.4 Participant observation
The second qualitative method I used to assess the RER sustainability project and therefore to answer my research question was the “participant observation”. This qualitative method helps researchers to learn the various perspectives held by the different stakeholders involved. Generally, the analysis of various perspectives is accomplished through observation alone or by both observation and participation within the case study. Through this method I had the opportunity to visit the project site and make the necessary observations, understand and explore the complex challenges faced by the company along with the benefits created by the project itself. I interacted in an informal way with the project members which were security guards, management officials, naturalists and scientists: although I gained significant source of data which I used in this thesis, I did not include them in the interviewee list and guide since there were constraints in conducting formal interviews while visiting the project site. However, the informal interaction was useful in confirming the findings from the more formal interviews.

Thus, by using the participant observation technique, I was able not only to understand the data collected through the use of interview, but also it has helped me to design the right questions to ask and to better comprehend the phenomenon under study. The three main disadvantages of using this method, when compared to qualitative interviews is that its time-consuming, difficult to document or write down the data observed when you are in act of participating and that observing is inherently a subjective exercise. Because of that there is a need to pay attention to avoiding excessive biases and manipulations of the observations, to minimise subjectivity of interpretation (See Table 4). It is therefore important to understand the difference between reporting or describing what the researcher observe (more objective) versus interpreting what he sees (less objective) (Mack, et al., 2005). Because of that I made a conscious effort to employ objective view on the issues that I investigated. Also, as it was not possible to take notes during the observation, I took notes directly after leaving the field, to be able to save as much of important findings as possible.
<table>
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<tr>
<th>Participant Observation</th>
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<tr>
<td><strong>Strength</strong></td>
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<tr>
<td>Allows for insight into contexts, relationships and behaviour</td>
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<tr>
<td>Can provide information previously unknown to researchers that is crucial for project design, data collection, and interpretation of other data</td>
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<tr>
<td>Requires conscious effort at objectivity because this method is inherently subjective</td>
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</table>

Table 4: Advantages and disadvantages of using the participant observation method compared to qualitative interviews.
Source: Mack, et al., 2005

6. Results
In this section, the five sustainability criteria were used in order to assess the RER project. A set of questions for each criterion were posed to 20 interviewees who were then divided into four groups (See Table 5). Consequently, in table 5, that summarise the results of my analysis, I am presenting those for these four groups separately.
<table>
<thead>
<tr>
<th>Criteria</th>
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<th>Scientist and Governmental Organizations</th>
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Table 5: The summary of the results from the analysis. Each criterion of sustain-centrism is evaluated against 4-6 key principles, as reported by each of four stakeholder groups. ✓= present; ✗= absent; ✓/✗ = more absent than present; ✓/✗= more present than absent. Source: Annex I and II
6.1 Inclusiveness

The investigation of the first criterion showed a limited inclusion by RER, especially of the villagers who lived at the project’s borders. However, APRIL and the two project partners at the head of RER, FFI and Bidara, established a strong collaboration in order to reach the goal of developing a sustainable restoration and conservation model. According to the company interviewees, the relationship with the villagers was positive and they were also taken into consideration during the decision making (Interviewee 1; and 2). However, several NGOs (6; 7; 8; and 9) had criticised APRIL GROUP for not undertaking the Free Prior and Informed Consent (FPIC) within the villages, although the company stated the opposite. Through the FPIC procedure, a community has the opportunity to withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use (Forest Peoples Programme, 2016).

On the whole, all the interviewees regarded RER project as an innovative, ambitious and, at the same time, a positive one for the environment with the potential of creating many ecological benefits (e.g. 3; 4; and 7). However, many argued that without better including the social aspects in their approach, such as facing social tensions or conflicts, the project is destined to fail (e.g. 5; 6; 7). APRIL Group interviewees claimed that RER’s policy was not to impose or limit the villager’s lifestyle nor affect their traditions or livelihoods unless considered unsustainable or damaging towards the area to restore (1; 2). Instead, they underlined that the aim was to support the local communities and provide them possibilities for development. Quoting a member of APRIL Group: “RER presence creates crucial economic incomes, a development opportunity for local communities since it usually employs people coming from the lowest social classes such as farmers and fishermen” (1).

Despite these positive outcomes described by the APRIL interviewees, the other interviewed groups revealed that social considerations were lacking from the RER project. For example, many villagers had said that no one, so far, had been employed by RER. Also, many still lacked knowledge regarding the restoration concept, including what it meant and what its objectives were (13; 14; 15; 16; 19; and 20). According to the majority of the villagers and NGOs representatives, transparency was absent in the project, and the communication between the GOI, the company and the villages surrounding the RER project was insufficient or lacking. Quoting the interviewed scientists, they confirmed that: “RER needs to better include the social discourse in their work and respect the community rights, if APRIL wishes to make the project successful” (3; 4; and 12).

6.2 Connectivity

According to APRIL Group, several disturbances related to human activities have contributed to the peatland degradation and deforestation in the Peninsula: the huge pressures on peat are not only caused by bad land management but also by global issues such as, population growth, widespread poverty, lack of education and increased demand for and consumption of pulp products (1; and 2). RER applied the company’s CSR guidelines and simultaneously promoted environmental conservation, economic development and sustainable peatland management (1; and 2). Furthermore, the interviewees believed that the overall benefits linked to the project would be produced only when the Kampar peatland was successfully restored and the HTI plantation sustainably managed. However, according to several NGOs, RER could become sustainable only if it collaborated and connected with all the relevant stakeholders and with particular attention to the village group (5; 7; 10; 8; and 9).
In addition, quoting NGO representatives and scientists “the natural restoration of peatlands can be achieved if the direct and indirect impacts are stopped, but also if the company, along with the project partners, changes their BAU model, install a better governance and improve the transparency of their activities.” (3; 4; 10; 8; and 9). The interviewed scientists also proposed: “there is a need of adjustments in policy and a change in market demand which can further pressure the industry sector to modify the company’s BAU model” (3; and 4).

Eight out of ten interviewed scientists and representatives of civil society believed that if drainage, caused by APRIL’s HTI plantations, continued, the current and future consequences would dramatically affect the RER conservation efforts. According to them, this area would experience land subsidence, increased fire outbreaks, GHG emissions and flooding events and loss of biodiversity along with its ecosystem services in the long term (3; 4; 11; and 12). Therefore, the ring plantations surrounding the RER project and seen by APRIL Group, as a necessary buffer zone protecting the peat area from the external encroachment (2), was viewed unsustainable from an ecological and social perspective by scientists (3; and 4). According to them, the current crops used which required drainage should be substituted by native plant species (3; 4; and 11). Both the interviewed APRIL representatives and the scientists considered transmigration a significant issue. The transmigration program, adopted by GOI from the 70s, was about transporting people from densely populated islands (core areas) to scarcely populated ones in order to ease the overpopulation issue (Fearnside, 1997). Those migrants were supported by the GOI in settling in those areas and developing farming. Kampar Peninsula, but more in general, Riau hosts one of the highest transmigrating communities across all Indonesia and this has been one of the leading causes, according to APRIL and some scientists (1; 2; 11) of widespread deforestation and degradation rates.

All eight interviews from the village group confirmed: “… Since the arrival of APRIL and the RER implementation, the cultivation of staple crops such as rice and corn has been compromised due to the limited access to new land and the “no burning” regulation introduced by the GOI”.

This means that the villagers’ lifestyle, traditions and culture had changed and been significantly affected negatively. Because of that, and because no substantial benefits had yet been produced, five interviewees (13; 14; 17; 19; and 20) considered RER to be a green-washing attempt. As claimed by some interviewees (7; 8; 9; 11; 14; 17; 19; and 20) the GOI had always given preference to private companies rather than to communities in managing lands. For this reason, during the interviews, every villager claimed that the GOI was the main one responsible for their negative living conditions. In the past, the villagers applied for the “Forestry Village Programme” (FVP) to the MoF, a project where 10000 ha of land was destined to the villages surrounding the Kampar peat area in order to be managed, restored and protected. Only 4000 ha were assigned in the end, while in the same year a much bigger area was given to APRIL for the same purposes.

6.3 Equity

The interviews have showed that the presence of RER had created a tense atmosphere, causing long periods of violent riots, campaigns and protests between the company and the villages. At times those conflicts also spread inside the same village and within the same family. Villagers have reported receiving written warnings, restrictions but also threats from APRIL’s security guards when accessing the area under the RER concession (7; 8; 9; 14; and 16). However, according to APRIL interviewees, RER mission was to work and collaborate
closely with the villagers in order to regulate their activities, avoid the ecosystem’s exploitation and assure the major benefits for every stakeholder (1; and 2). Quoting an APRIL’s interviewee “RER carefully includes and respects the villagers’ rights through a transparent and friendly relationship with the community” (1).

However, many villagers claimed that there was a lack of clear communication between them, the company and the GOI (14; 15; 16; 19; 20). There was widespread consent that 99% of the fires spread in the Kampar peatland were human induced and the company tended to accuse the villagers of being responsible for setting them and for causing intensive peatland degradation.

Quoting several interviewees from the NGO group, they confirmed that “… RER only represents an additional competitor, producing more social tensions and major impoverishment rather than improving the living conditions of the villages surrounding the project” (6; 8; and 11). Three out of six interviewees (6; 8; and 9) from the NGO group confirmed that there was no relationship between RER and the surrounding villages while four out of eight interviewees (14; 15; 17; and 18) from the village group declared that only from this year did members of RER visit their village and inform the people more about the project.

According to scientists, NGOs representatives and villagers: “The GOI should give a greater support to the communities in facilitating the conditions for a sustainable and alternative way of managing land, but also in defending their rights and obliging the company to distribute fair, transparent and equal compensations” (6; 8; 11; 14; 15; 17; and 18). According to the interviewees, due to the limits set by RER, villagers were no longer able to freely access the Kampar peat dome and were obliged to buy rice and wood from outside, which was more expensive and increased the economic costs while decreasing the incomes, thus causing gradual impoverishment. Therefore, there was an overall belief among most of the interviewees (excluding APRIL representatives) that the benefits generated by RER would never compensate the communities for the vital services the peatland provided and which they depended on (e.g. 3; and 4). However, some interviewed villagers supported APRIL’s presence since it had offered alternative livelihoods by hiring them in their HTI concessions: they were hoping that the same thing would happen with RER (15; and 18).

The total absence of official written documents assessing land tenure rights for the villagers or local communities made them powerless and vulnerable in front of unfair governmental decisions and company’s actions (6; 7; and 8). In addition, the interviewed scientists accused the company of lacking in transparency in the research so far conducted in the case study area, thus leading to mistakes and unfair decisions (3; 4; and 11). Since the company is the sole donator of the funds, it always decides itself where to designate the particular amount, without previously consulting the head of the village.

6.4 Prudence

The evaluation of the prudence criterion showed that according to APRIL, RER was adopting a prudence strategy based on the company’s CSR guidelines. This consisted of the introduction of a “no fire policy” which aims at halting the fire hotspots that had so far been dominating the area and at implementing the “Fire-Free Village Campaign”, an awareness campaign in which villagers were educated towards the environmental and health risks related to fires (1; and 2). In relation to this, there was a widespread consensus among several NGO members which confirmed: “… Many environmental NGOs are hoping that through
the adoption of APRIL’s CSR and its various peatland management techniques, as the eco-
hydro system, RER can generate the necessary benefits for the area and the people living next
to it” (7; 8; and 10). However, they also suggested that APRIL should focus not so much on
the quantity of money invested but more on the quality of how these funds are spent. As
much as half of the interviewees (10 out of out of 20) warned that if APRIL kept adopting its
traditional BAU model, “which is heavily profit oriented” (3; 4; 5; 6; 7; 8; 9; 10; 11; and 12),
the RER project was destined to fail.

For the scientific and governmental group of interviewees, managing the peat dome’s water
table by introducing dams, substituting unsustainable crops with native ones and abandoning
any kind of industrial activity in the surrounding area was vital for the survival of this
ecosystem. RER is managing the water table through its “Eko-Hidro” technique, which
APRIL had identified as crucial to avoiding potential dramatic consequences such as peatland
subsidence. This unique technique consists of closing all the canals through the introduction
of a series of dams; those canals are responsible for peatland drainage and were built in the
past by logging companies or illegal loggers. Widespread over-drainage events result in
major CO2 emissions, soil subsidence, fire and flooding (this can be seen in Figure 12). For
this reason, the scientific community viewed RER as being in contrast with the presence of
APRIL’s HTI plantations, since the latter was causing the drainage of peatland also within
the RER boundaries.

![Figure 12](image_url)

**Figure 12:** Peatland drainage is one of the leading causes of land subsidence. HWL: High Water Level. FDL: Free Drainage Limit. Source: Hooijer et al., 2015.

The need for RER to embrace a community land management discourse where villagers
collaborate and work together with APRIL and its partners, one of the main necessary
outcomes of the Prudence criterion, was seen as fundamental by many of the interviewees.
Although the project was overall welcomed positively by every interviewee, for many of
them it was still considered unsustainable due to the presence of the HTI ring plantations.
Quoting the interviewed scientists about this: “... If APRIL does not phase out its drainage
activities in the HTI plantations surrounding the project, the resultant consequences are
going damage their business, thus turning the area into an unproductive land” (3; and 4).

Despite the many criticisms, some villagers interviewed reported that APRIL was committed
to generating the necessary services in order to support the community (16; and 18). The
compensation system was never very clear or transparent but scholarships, mosques and
various ceremonials had always been granted by the company, although this was seen as not sufficient and in need for improvement (18). According to villagers, increased social tensions, competition and conflicts broke out among villages when APRIL and its concessions got established in the area. The heads of the villages interviewed were interested in learning more about the RER project, how they could benefit and if there was a compensation scheme, since they were concerned about the village’s future (14; and 16).

6.5 Security
Regarding the last criterion, the interviews have revealed how active was APRIL in undertaking future projects which would produce potential benefits for the economic development of the case study area (1; and 2). For instance, one of the main aims of RER and APRIL was to reach the one-to-one target which implies to conserve the same amount of ha as the ones used in the HTI ring plantation concession. Furthermore, the development of a sustainable eco-tourism industry connected to RER could represent a significant opportunity for local communities. Nevertheless, according to APRIL interviewees (1; and 2), “… RER is not yet sustainable from an economic perspective since we represent the only investor and the amount of money so far spent, has not produced any returns yet”.

According to the interviewees from the company, APRIL was constantly working side by side with one of its partners, the social NGO Bidara, in order to change the sceptical perspective the local community had towards the company. They claimed that they were open to any form of constructive criticism but only if it would help to improve RER.

The majority of the interviewees claimed that the security of the villagers was currently jeopardized not only by the presence of restrictions imposed by RER and the HTI concessions but also by the patrolling guards present within those concessions. They also accused the GOI for the lack of law enforcement, good governance and community support. One mechanism that could solve and halt the social tensions and conflicts caused by the presence of the company and RER was the “Whakatane Mechanism” proposed by one of the interviewees belonging to the NGO group (7). Through this mechanism indigenous or local community rights were integrated into forest conservation programmes.

Scientists and governmental officials interviewed, accused APRIL of having a hidden agenda: “… Obviously there must be a hidden agenda since they are not interested in investing all this money with the sole intention of saving or restoring the environment” (11; and 12). Many villagers, NGOs and governmental officials believed RER to be an additional restriction, a “green washing attempt” where the main benefits generated were destined solely to license-holders (e.g. 9; 12; 14; 19; and 20).

Alternative ways of managing peatland without ending industrial business existed although no one was applying or investing in them (3; 4; and 6). APRIL was instead investing millions of USD in the communication and public relation sector showing the commitment to protect and restore the environment. However, six out of 10 interviewees (3; 4; 6; 8; 9; 10) believed that there was no guarantee that RER’s actions, e.g. “zero deforestation pledge” or the “Fire Free Village Programme” would also be kept in the future. Two necessary factors that would ensure positive outcomes for the future of the case study area were mentioned: that both company and GOI should work to include local communities in their green investments and in their sustainable certification scheme (3; 5; 8; 9; 11; and 12).
6.6 RER positive and negative impacts
The analysis of the 20 interviews undertaken with the different stakeholder groups has shown no substantial benefits or positive impacts generated so far due to RER’s implementation (See Table 6). The majority of the interviewees agreed on the fact that it is positive from an environmental perspective, but only if some changes and adjustments were applied by APRIL Group and the project’s partners. The villagers experienced no direct benefits yet and the information regarding the project’s presence had just been initiated in some villages. Nevertheless, according to APRIL interviewees, there were already many positive results that RER had achieved: particularly, gaining an ERC in the Kampar Peninsula’s peat area was extremely important as the area has been significantly affected by years of destructive industrial activities.

Although APRIL claimed that RER was providing alternative livelihoods through the creation of many job opportunities for the villagers and was supporting development, reintroducing key wildlife and plant species and halting fires, the opposite was stated by the majority of the other stakeholders. Scientists and NGO exponents viewed RER as a potential tool for creating positive impacts but only if drainage surrounding was stopped and if there was a better social inclusion process.

In APRIL’s perspective, RER has generated no negative impacts and the relationship between them, the GOI, the stakeholders involved and the villagers was overall a good one, although at times challenging. This was in contrast with what NGOs, villagers and scientists stated. According to them, the presence of RER and APRIL was exacerbating social conflicts and tensions among the various villages, because lack of information, inclusion, transparency and involvement made the existing tensions within villages stronger. In addition, RER was viewed by many as an additional competitor for villagers in accessing the land and using its natural resources.

No alternative ways of growing crops have so far been taught to villages either by RER or the GOI. The traditional ways of managing land were currently forbidden due to the implementation of several rigid regulations which had increased the costs and decreased the incomes thus favouring impoverishment of the local communities. To conclude, no villager was working with RER at the time when the present study was conducted.
<table>
<thead>
<tr>
<th>Impacts</th>
<th>GROUP OF INTERVIEWEES</th>
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<tr>
<td>Positive</td>
<td>RER-APRIL</td>
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<tr>
<td>- The restoration and protection of an important ecosystem.</td>
<td>- No visible positive impacts or benefits</td>
</tr>
<tr>
<td>- Alternative livelihoods</td>
<td>- Environmental benefits possible if RER stops drainage caused by APRIL’s HTI concessions</td>
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<tr>
<td>- Reintroduction of key wildlife and plant species</td>
<td>- The halt of fire events</td>
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<td>- Decrease of GHG emissions</td>
<td>- Challenges working with communities</td>
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<td>- No significant negative impacts</td>
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Table 6: A summary of the current positive and negative impacts related to the RER project as reported by the four groups of stakeholders.
7. Discussion
The Indonesian MoF officially introduced the ERC concept in June 2004 as a new way of managing HPH concessions intended to stop the deforestation of tropical forests, against the growing pressures among transnational conservation organizations. The present study has revealed that despite some environmental benefits generated by ERCs, its overall policy and business model generally reflects a high negative impact on forest-dependent communities leading to significant social conflicts at a local and regional level. Although the conceptualization and implementation of ERCs is in general considered one of the best potential mitigation strategies to contrast the environmental and developmental crisis (Buergin, 2016), different actors perceive it differently, depending on their various interests and goals. For the GOI, ERCs are a way to procure revenue and restore degraded logging concessions areas with no costs; NGOs conceive the ERC concept as conservation opportunity for the protection of wildlife species and of biodiversity; while businesses usually view it more as a model to generate profits from forestlands and forest resources.

RER represents one of these ERCs, established by APRIL, with the aim to restore the heavily degraded peatland area. RER was presented in the media as the biggest investment undertaken by a private company in a single eco-restoration project across Indonesia (The Jakarta Post, 2016). However, the analysis undertaken from the sustainability perspective revealed discrepancies between the views of the four interviewed stakeholders’ groups. Three main issues were identified as necessary for the RER to deal with and those were: the social participation, the Kampar Peninsula’s land management and the impacts, benefits and costs the RER project causes for the case study area.

7.1 Social Participation
Regarding the first issue, it has been revealed that the establishment of several HTI concessions linked to APRIL’s arrival in the Kampar Peninsula, has caused tensions leading to social conflicts between the company and the local communities. According to the villagers and various NGOs, the social discontentment was mainly caused by the restrictions imposed by APRIL from entering its sites covered with concessions, which significantly limited their opportunities to have direct access to new land and grow crops, collect wood and fish or hunt.

An estimated 1.6 billion people around the world depend on forests for their livelihoods and 1 billion instead rely on peatlands (Wongbusarakum et al., 2014). In recent years many studies have reported the challenges faced by those local communities in using forest and peatland products due to deforestation, degradation and logging events (Hillegers & Longh, 2001; Isager et al., 2002; Roe et al., 2015; Wright et al., 2015). There is a general view among conservationists that community participation is crucial to consider in conservation and restoration programmes. Critics have often reported that the failure of such programmes were usually associated with a lack of social consultation, inclusion, involvement and cooperation of the project holders (Hillegers & Longh, 2001; Isager et al., 2002; Roe et al., 2015; Wright et al., 2015). These aspects must be taken into consideration since they represent the core principles of the sustain-centrism criteria within my theoretical framework, namely inclusiveness and equity.

The importance of fulfilling these criteria and therefore creating a balance between the three sustainable pillars; environment, economy and society, and at the same time achieving fairness, equity and justice, are viewed as crucial for sustainability. As a consequence, the
participation concept has gained increasing importance and has become a key issue to be considered during the implementation phases of conservation related projects. Although these changes have occurred, according to Wily (1997), it is still very common to see a traditional style of management which does not involve local people. According to Hillegers & Longh (2001), three main principles have been identified which need to be adopted in the conservation and restoration programmes: 1) local people need to be involved in the conservation management activities; 2) local people should have legal rights and obligations to participate in the conservation management activities; 3) local people should be actively involved in deciding which activities to develop in order to achieve a conservation management system which is economically feasible, socially adaptable and ecologically compatible.

This study has revealed that although the representatives of APRIL claim that the level of participation of local people is good, the other interviewees state the opposite. RER does not seem to be following the three aforementioned principles of local people’s involvement, but is rather adopting a “minimum” level of participation where people are only involved as wage labourers and act merely as an object, thus having no rights to make any proposals concerning the activities undertaken by the project. This “top-down” approach is in contrast to the “bottom-up” one, where people are involved in all the major management functions of the conservation activities, starting from the planning process through implementation, to the marketing (Hillegers & Longh, 2001). Such a top-down approach could have led to dissatisfaction of local people and other stakeholders with the RER project and negative perceptions of its implementation. This suggests that APRIL needs to complement the top-down approach with the bottom-up one to improve their relationship with the people from the villages in order to be judged sustainable from a social dimension and therefore fully respect the inclusiveness and equity criteria of my theoretical framework. There is thus a need to start considering participation more as a process to embrace in project planning rather than viewing it as a problem for its success (Hillegers & Longh, 2001; Isager et al., 2002; Roe et al., 2015; Wright et al., 2015).

According to Isager et al., (2002) participation can also be viewed as a series of steps or phases. For instance, through communication and collaboration between different groups of stakeholders, knowledge about best practices and past mistakes to avoid can be shared in order to simplify the achievement of the project’s goals. To fully implement the participation concept, there is a need to build trust among the stakeholders involved. Those two key aspects are considered vital to respect and satisfy both the inclusiveness and equity criteria of this study. Conservation of peatland resources require that the stakeholders commit to the task of sustainable use of these and trust one another. In order to build up relations of trust, according to FAO (2004), legal or administrative procedures may have to be changed and power may need to be redistributed. Also, trust needs time to develop, especially if the stakeholders have limited experience of sharing decision-making powers and responsibilities, as for the case of RER.

Since the trust issue between the company and the villager group, was rather absent, RER planners and other stakeholders were called to strengthen such relations in the future. Listening carefully to ideas or complaints and acting in a respectful manner towards the others affected or involved in the project can be fundamental for the development of trust. The results show that RER representatives were listening to some problems encountered by the local communities. This was confirmed by a few of the villagers interviewed, however, to a limited extent. According to FAO (2004) in order to establish a good level of trust among
the stakeholders there is a need for concrete actions rather than words or promises. These actions from RER were yet not very clear or visible. Moreover, stakeholders together with RER project planners should learn from each other through the development of new relationships and transforming the existing adverse ones into trust-based ones where everyone learns to appreciate the legitimacy of each other’s views and work together to develop potential benefits and solutions (Torjman, 2000; Isager et al., 2002; Reed, 2008).

However, developing good participation and building trust is a long process that requires time, resources and real commitment. To succeed in that, the company, would need to also receive major support from local institutions, the GOI and civil society in order to improve the levels of community participation and generate a transparent and effective coordination between all parties involved and affected by the project (Hillegers & Longh, 2001). Although reaching participation is often difficult, because the overall circumstances vary from place to place and from time to time, according to Lutz & Caldecott (1996) and Wily (1997), the rewards produced by those conservation and restoration projects which have implemented a truly participatory process and followed the sustain-centrism criteria are impressive.

In order to achieve a good level of social inclusion and participation in RER, two potential solutions can be proposed to APRIL: 1) the “Community Forestry Programme” (CFP); 2) the “Whakatane Mechanism”. The implementation of the CFP has shown satisfying results in past conservation and restoration projects. According to Pokharel findings (2003), the results of devolving managerial rights to villagers in Nepal under the CFP, has had noteworthy achievements, including forest restoration, social inclusion and representation, improvement of community infrastructure, rural development and contributions to poverty reduction. This forest management operated by communities has contributed to environmental improvement with an increased availability of forest products along with local peoples’ rights of access (Pokharel, 2003). The establishment of CFP programmes in the Kampar Peninsula area, could bring similar benefits as the Nepal case, although the general conditions may vary and affect the final outcome of such initiatives. A similar project is already present in the Kampar Peninsula with the name of “Forestry Village Programme” (FVP), a project that shares the same objectives and principles as the CFP one. Although many authors have underlined the potential environmental and social benefits of such programmes, others have also reported long term challenges. Where implemented, CFPs showed key problems such as: subsistence versus commercialisation; governance, monitoring and evaluation measures; livelihood, equity and gender issues; taxes and subsidy; and dominance of elites and high caste among the various communities (Kumar, 2008). APRIL and the GOI should take into consideration the development of this alternative way of managing land and cooperate with local communities. However, it should also be cautious and prudent at the same time, thinking carefully of the potential consequences since mistakes can be difficult and expensive to correct.

The second solution is represented by the adoption of the “Whakatane Mechanism”, a new agreement developed, in 2011, by the International Union for Conservation of Nature (IUCN), Conservation International and the Forest Peoples Programme (FPP). This mechanism aims to assess the social situation in various protected areas around the world and, where the local communities are negatively affected, to propose solutions and undertake measures to improve the partnerships between people and conservation programmes. The objectives of such a mechanism are to: (i) explore opportunities for conflict resolution at the local level by involving indigenous peoples or local communities and representatives of protected areas; (ii) support and promote national multi-stakeholder dialogue and favour
consensus-building. The methodology used by the Whakatane Mechanism consists of undertaking multi-stakeholder assessments and dialogue to check which indigenous people and local communities gain benefits from the protected areas. The Mechanism also promotes better practices and successful partnerships between indigenous people or local communities and representatives of protected areas.

Several principles were proposed by this mechanism which could, if implemented, improve the social dimension of sustainability of the RER project (Whakatane Mechanism, 2016). These are: the recognition of land/territorial and resource rights; the necessity for prior agreement on the establishment of new protected areas on their lands or territories; rights to effective participation of local people in protected area management; protection of the vulnerable and the most marginalized portion of communities through special efforts which prevent harm or infringements of their rights; respect of the indigenous and local communities land tenure rights, and the use of the FPIC regarding possible interventions on their lands, territories or resources.

The results of this study show the enormous difficulties APRIL has, through RER, to improve the community livelihoods especially if participation, trust and social based activities are not adopted. There is a general opinion among the villagers, that the project’s presence is viewed as an additional competitor, generating limits and restrictions to the various activities undertaken by villagers inside the peninsula. Moreover, instead of feeling involved by the project villagers often feel discriminated and accused, both by the private company and the GOI, of being responsible for setting fires to peatlands, which increases their mistrust towards the project even more. These issues, again, indicate that the social dimension of sustainability has been to a large extent neglected by the APRIL company when implementing RER, and thus suggest the need for a greater involvement of the social aspects in the project’s vision.

7.2 Kampar Peatland’s land management

The peatland management of the Kampar Peninsula is the second issue of concern for RER. According to Wösten et al., (2008) peatlands have been, in recent years, subjected to fire, erosion and flood events showing the extreme need for restoration. This shows how the sustainable peatland management is strongly connected to the three sustain-centrism criteria of my theoretical framework: connectivity, prudence and security. Unsustainable peatland management is responsible for the potential negative impacts, generally caused by a lack of prudence, and a threat to the environmental, social and economic security. As a consequence, people implementing RER need to understand the importance of the connection existing between a sustainable peatland management and the adoption of the precautionary principle typical of the prudent criteria. Furthermore the sustain-centrism concept requires for an efficient long term planning which demands for safety from chronic threats and harmful disruptions.

The main function of restoration is to initiate or accelerate the recovery of the ecological functions of peatland ecosystems in order to be sustainably used for various purposes ranging from agriculture, agro forestry, carbon storage to wildlife conservation. Water management is considered by many academics to be the vital basis to focus on to achieve peatland restoration (Wösten et al., 2008; Hooijer et al., 2010; Hooijer et al., 2015). Although peatland deforestation and degradation is not only caused by bad land management but also by several global issues such as, population growth, poverty, lack of education and increased
consumption, RER can still be seen as a potential solution to improve the delicate balance of this ecosystem.

So far, the widespread over-drainage in the RER area has caused the criticism from the scientific community. As a result of this, the new report published by WI and Tropenbos International (2016) confirms that APRIL’s “Eko-Hidro” water management approach, the model claimed by RER representatives to provide a sustainable form of water management, lacks a clear and scientifically robust basis (Wetlands International & Tropenbos International, 2016). Therefore this “Eko- Hidro” model is not considered a valid option for a sustainable peatland management in the Kampar Peninsula area, making RER not suitable yet on satisfying both the prudence and security criteria (Wetlands International & Tropenbos International, 2016).

The report continues by encouraging APRIL to follow and undertake the four recommendations proposed by the peatland experts. Those are: 1) Addressing subsidence, flooding, emissions, and dry season fire risk will require the complete phasing out of drainage in the majority of Indonesia’s peatlands; 2) Undertaking a new approach to land use zoning based on current drainage condition, land cover, biodiversity and economic considerations; 3) Expanding the focus of peatland restoration beyond previously burnt areas to also include natural forest areas as a priority for restoration and all peatland areas identified by the new approach of land use zoning; 4) Implementing policies for peatland management and restoration, improving definitions that differentiate domed peatlands from valley and watershed peats and providing a clear legal basis for the spatial delineation of the peat dome within domed peatlands (Wetlands International & Tropenbos International, 2016).

However, addressing all these recommendations and dealing with the management of a widespread degraded peatland area and its water table is a complicated task which requires time, collaboration between stakeholders and high financial resources. In case of RER, APRIL is, therefore, called to invest more resources to not only halt peatland drainage and introduce native plant species, but to also develop a sustainable management model with clear policies. Until this drainage is completely halted, with the replacement of native plant species, that do not require drainage, the peatland management approach proposed by RER and APRIL cannot be considered sustainable and insufficient into satisfying the connectivity, prudence and security criteria.

RER has a great amount of funds to undertake several projects and so to adopt a more sustainable peatland management approach. For example, in response to the criticism previously expressed throughout the study from the scientific community, APRIL has established the Kampar Science Based Management Support Project (SBMS Project) a collaboration between a group of consultants and scientists. Its objective is to support improvements of forest conservation and water management inside the HTI plantations and RER (Hooijer, et al., 2008). The main aims of this project range from reducing the water table variations, through minimizing drainage next to sensitive conservation forest areas, to monitoring and studying the results of these interventions to learn and develop guidelines for responsible plantation and land management on peatlands. It is hoped that if these techniques used by APRIL become successful, they could be exported outside RER and applied to other future restoration and management projects. It is hoped that if these techniques used by APRIL become successful, the RER could be judged sustainable against the connectivity, prudence and security criteria, be exported outside RER and applied to other future restoration and management projects.
7.3 RER’s impacts, benefits and costs

Third important issue revealed in the study is about the impacts the RER project has on the area. The significant social impacts, for instance, linked to the presence of the project are leading to drastic consequences for the local people’s economy. According to Roe et al., (2015), “alternative livelihood” projects have long been used as a strategy for reducing local level threats to species, habitats or resources of conservation concern. There is much evidence showing that conservation and restoration projects can provide alternative livelihoods and those can be divided into three categories: 1) those that provide an alternative resource to the one being usually exploited, for example, promoting imported animal protein as an alternative to locally hunted bush-meat; 2) those that provide an alternative occupation so as to reduce the need to exploit natural resources for income, for instance, promoting craft making and butterfly or bee farming as a substitute for expanding agriculture (Morgan-Brown et al., 2010); and 3) those that encourage an alternative method of exploiting a resource that has a lower impact compared to the original one and therefore more sustainable, for example, promoting fuel-efficient stoves to reduce the need to cut trees for firewood (DeWan et al., 2013), or changing the marketing strategy to increase incomes from the sale of wild coffee, thus reducing the need to convert more forest into farmland (Lilieholm & Weatherly, 2010). If the sustain-centrism criteria are correctly followed, respected and implemented, these alternative ways of living can provide numerous benefits and represent a win-win situation for every stakeholder involved.

Despite the several alternative livelihoods usually provided to local communities by conservation projects, the conservation effectiveness and success measured of such projects is surprisingly low. For example, a study by Roe et al., (2015) shows how in 106 global conservation projects which proposed alternative livelihoods, only 21 could be declared as successful and only nine were considered effective in either improving local attitudes towards conservation, reducing environmentally-damaging behaviour or improving the conservation status of a biodiversity target. The explanation for this lies in the alternatives provided, which, all too often, are considered by local communities to be a supplementary source of income rather than a substitution. This has caused the exploitation of the original resources to be at similar levels prior to the introduction of the alternatives (Wicander & Coad, 2015; Wright et al., 2015). It has even been reported that the additional income may even subsidize higher levels of natural resources exploitation by enabling local communities to purchase more efficient but also more damaging equipment (Wright et al., 2015).

Despite these issues, there is no doubt about the connection between the success of conservation projects and the provision of alternative livelihoods. Although provision of opportunities for such livelihoods will not always be sufficient in assuring positive outcome of a conservation project, the respect of the inclusiveness criteria is a necessary precondition of its success. Since APRIL is not yet much engaged in co-operation with the villages and is neither offering many alternative livelihood strategies to local communities, showing insufficient levels of inclusiveness, the project does not seem very sustainable from the social perspective. However, in order to make this project fully sustainable it is important to carefully select the various alternative livelihoods for the specific cases and analyse their impacts in the long term, as previous studies have shown (Roe et al., 2015; Wicander & Coad, 2015; Wright et al., 2015). For RER, APRIL should improve community engagement as previously mentioned, get training and support from social experts in order to comprehend the difficulties of the villages surrounding the concession borders and be continuously
monitored by an independent party to evaluate if the alternative livelihoods provided by APRIL are generating more benefits than costs to the local people (Hermosilla & Chip, 2005; Wicander & Coad, 2015).

It needs also to be underlined that since the “no burning” restriction was introduced by the GOI, it should also be the government’s responsibility to co-operate with APRIL in providing the local people possibilities for alternative livelihoods. There is a general opinion among the villagers that the company is already providing some help in terms of support, through the various forms of compensation given, while they feel completely abandoned by the GOI that does very little to help the villages develop alternative livelihoods and new ways of growing crops. The villagers are also deeply disappointed with the GOI for denying the release of the FVP in which a total of 10 thousands ha of degraded peatland were promised to six villages but instead most of it was given to APRIL to manage. This suggests that the GOI trusts and gives priority to private companies over local communities to managing and restoring degraded lands. This event can also be related to the various political problems affecting Indonesia, such as corruption, bureaucracy and weak law enforcement as reported by many NGOs.

The GOI needs to be more present and supportive since it cannot consider the compensations given by the company sufficient to solve the issues faced by the villages. This shows how urgent it is to build a transparent and more efficient communication and collaboration between the three main stakeholders involved: RER, the villages and the GOI. According to Isager et al., (2002) a government can play a crucial role in providing the right conditions for favouring conservation and community participation: this can be achieved through the decentralisation of the Government’s political, fiscal and administrative power, the provision of land tenure rights and security to local communities and the education or other forms of capacity building. Furthermore, the presence of a weak law enforcement and cooperation between the different governmental agencies, makes conservation and restoration projects unlikely to become sustainable (Tyler, 1999). The introduction of sustainable peatland and forest management policies, the implementation of a national tenure reform initiative and the certainty that the local population can benefit from the investments of the business sector are all needed (Isager et al., 2002; Hermosilla & Chip, 2005; Colfer et al., 2008; Hilhorst, 2010). Building sustainable institutions and mechanisms require time and resources although the urgency to restore deforested and degraded lands are increasingly pressurising national and international governments to implement them (Hermosilla & Chip, 2005; Colfer et al., 2008; Hilhorst, 2010).

Global conservation strategies inevitably entail both social benefits and costs. Those strategies provide, for example, clean air and water, the growth of new types of economies and ways of life based on nature and the revaluation of cultural and aesthetic values of wildlife species (Springer, 2009). The costs, on the other hand, can include limitations to the resources used, physical displacement, social conflicts and cultural changes in consuming natural resources (Springer, 2009). Distribution of those benefits and costs vary enormously within the different conservation projects, strategies and areas: in spite of this, there is an increasing recognition that “many costs related to protected areas, are borne locally-particularly by poor communities- while the benefits accrue globally” (IUCN, 2005; Springer, 2009).

According to Gamb & Lamb (2015), what makes ERCs uniquely valuable, is its inherent capacity to provide license holders with the opportunity to not only repair ecological damage,
but also to improve the human condition as well. However, the ecological benefits produced by a conservation and restoration project are usually obvious and crucial: what is usually less apparent but equally important to take into consideration, is the social dimension (Springer, 2009). The duality existing between conservation efforts and social impacts is not new and it is unfortunately predominant in RER, as the present study has revealed. This project respects the ecological principles of the ERC concept but it is encountering difficulties in fulfilling the social ones (Gamb & Lamb, 2015). Based on the results of this study, there is currently no proof that the project is improving human livelihoods or empowering local people, while the evidence of improvements regarding biodiversity conservation and ecosystem productivity is visible.

This study shows quite a clear division between APRIL and the rest of the stakeholders regarding the benefits and costs associated. According to Foster (2015), RER has already achieved significant results and produced several benefits: for instance, it has planted over 1,500 tropical trees, the first of over 2 million that are going to be planted over the next 10 years; 35 hired and trained forest rangers; established security posts at entryways to the reserve; implemented land, air and river surveillance to protect the area against fires and illegal logging; organised meetings to familiarise communities with RER; set up a native species nursery, where local workers have collected and prepared 1000s of seedlings for planting; installed over 200 camera traps to monitor wildlife and carried out several environmental assessments. However, scientists, NGOs and villagers have reported that no direct benefits but only costs have been so far been produced by the presence of RER. There is a general scepticism towards the success of this project among the majority of the stakeholders but there is also an overall hope that benefits will soon be generated. So far, RER is viewed only as an additional competitor for the villagers in an area already fully occupied by HTI concessions. If APRIL does not establish a “community conserved area” inside the RER boundary, potential risks such as increased social conflicts and widespread impoverishment can arise.

Restoration efforts are highly expensive and they often fail to meet the desired final results and promote environmental, social and economic sustainability (Banks, 2016). RER, as any other project, is facing many difficulties: however, the green-washing accusation attributed by civil society and scientists appears to be drastic and forced (The Jakarta Globe, 2015; Parker, 2012; EOF, 2012). Although, not many benefits have yet been produced, APRIL’s commitment to investing USD 100 million in RER over the next 10 years along with the initial and future projects planned, contradict these accusations.

Generally speaking, restoration programmes require the presence of two key factors in order to be successful: high initial financial investments and time. RER has at its disposal a stable financial partner, APRIL, who can invest a great amount of funds compared to what the GOI or the local communities can afford. Furthermore, since RER concession has a duration of 60 years, and only three years have passed, APRIL has also enough time to carry out its studies and implement the necessary recommendations developed by this study in order to make the project a sustainable model. However, in line with the study’s results, the sustain-centrism paradigm used to assess the sustainability of RER’s conservation and restoration model has produced clear evidences that the project is still far from being considered sustainable. Through the theoretical framework used in this thesis, it is clear how the inclusiveness and equity criteria are only partly satisfied by APRIL and major efforts are required from RER to improve social participation along with the respect of human and land tenure rights. Regarding the connectivity, prudence and security criteria, RER is working hard in order to
develop a sustainable peat land management and shift its BAU model into a more sustainable one although this requires time and collaboration. Overall, the five criteria used for the analyses of this study show how the project still presents various limitations against all the five criteria used and lacks in embracing crucial issues which could determine the necessary balance between ecological, economic and social dimensions.

8. Conclusions
Indonesia has an outstanding opportunity to sustainably manage their land and halt widespread deforestation, degradation and fire events through the implementation of the ERCs. Three crucial factors need to be taken into consideration for a successful implementation of ERCs. Those are: high initial financial investments, time and social participation. In relation to this, RER fulfils the first two requirements as it has a stable investor which is APRIL and a 57 year period to address the issues and recommendations reported in this study. However, this study also shows that RER is having difficulties in dealing with the social participation aspect due to the low inclusiveness and social participation levels shown. APRIL through RER is encouraged to follow a roadmap that favours an integrated collaboration and inclusion of local communities, the stoppage of natural forest and peatland clearing and conversion to HTI plantations, the establishment of a communal land management approach and the end of drainage events inside the HTI concessions. Based on the results of this study, the peatland management, conservation and development model adopted by RER cannot be considered sustainable as yet, as the social and management dimensions of sustainability are clearly not fully addressed. Analysing the small achievements already reached and the projects planned by RER, its future appears brighter although more social scientific research on this project, both qualitative and quantitative, is highly recommended, particularly with regard to finding potential solutions that would improve the social dimension of the project.
9. Summary
Indonesia is currently dealing with one of the highest peatland deforestation and degradation in the world. This phenomenon is mainly caused by strong economic and social pressures created by a fierce demand for timber, land for agriculture and industrial tree plantation developments. The widespread peatland drainage and deforestation are the main causes of land subsidence, as well as the increased GHG emissions, fire and flooding events. These consequences represent a significant threat to biodiversity conservation, climate change mitigation measures and people’s livelihoods.

In response to all these problems and to the increasing pressures from transnational and scientific nature conservation organisations, the GOI in 2004 issued a new approach to manage logged out production forests, through the release of the ERC licenses. This new concession had the aim to reverse and return deforested, degraded and damaged ecosystems to their “biological equilibrium”. The implementation of ERCs is particularly crucial for the Kampar Peninsula, in the Riau province, the east coast of central Sumatra, not only for the wide peatland extensions and the host of unique flora and fauna species, but also for the extensive degradation this area has experienced in time. Because of the special nature of this area, in May 2013, the ecosystem restoration and conservation project called RER was launched in the Kampar Peninsula by the Singaporean pulp and paper giant company APRIL in partnership with NGOs FFI and Bidara.

The purpose of this study was to investigate APRIL’s RER project and to answer the research question: if RER was a sustainable management, conservation and development model. In order to gather the necessary data, semi structured interviews and field observations were conducted and based on the five sustainability criteria (inclusiveness, connectivity, equity, prudence and security) developed from the “Sustain-centrism” paradigm, adopted for the theoretical framework of this study. During the field study, a number of different methods were used to find the targeted interviewees. Once identified, they were divided into four groups of stakeholders, which belonged to: APRIL-RER, environmental and social NGOs, scientists and governmental officials and villagers. Questions from each of the five sustainability criteria were posed to the interviewees from the four groups.

The study found that RER is far was far from being a sustainable project since many challenges on the ground started to mature and become visible. Three main issues were identified: the social dimension appeared to be the most problematic since there was a general lack of inclusion, collaboration, involvement and transparency from RER towards the villages living at the borders of the project. Episodes of human rights violation were reported by many interviewees although the company stated the opposite. The second issue regarded the challenge of managing the peatland water table and stopping drainage from the HTI concessions which is still affecting the RER efforts in the restoration processes. APRIL is investing immense funds into trying to halt drainage and restoring the whole area. The third issue regarded the benefits and impacts created by RER. According to many stakeholders the costs for local people are exceeding the benefits with no valid alternative livelihoods generated by APRIL.

The findings of this study support the general idea that RER is positive for the environment and can generate several benefits in the long term. For every restoration project, financial resources, commitment and time represent crucial factors to achieve the destined goals, criteria that APRIL seems to possess. Therefore, RER has an immense potential for the future, although the outcomes so far show that changes and major efforts from APRIL are
necessary. This calls for more qualitative and quantitative social scientific research in order to support the license holder to make the project successful and produce the best results for the environment and the stakeholders involved.
10. Acknowledgments

This thesis would not have been possible without the involvement, the consultation and support of others. I would first like to thank my supervisor, Dr. Malgorzata Blicharska for the outstanding help, patience and support during my work: Despite the ambitious challenges I had to face throughout the field project, she has made this research one of the best learning processes I have ever experienced.

In addition, I would like to thank Associate Professor Vilis Brukas who acted as my evaluator and gave me crucial inputs for further improvements.

Furthermore, I also would like to thank APRIL Group, in particular Mr. Petrus Gunarso and Mr. Brad Sanders, for letting me visit their conservation and restoration project RER and for allowing me to undertake various interviews. Thanks to Åsa Frisk for her support and help, the guides and translators Mr. Adi Pranowo and Mr. Ary Sandy and to all the interviewees who patiently answered my numerous questions.

A special thanks goes to Zeva Aulia Sudana, for her precious help and support during my stay in Indonesia, to Alexander Asheim Kyllevik for the intellectual talks on conservation issues, to my great and “historic” friends Gianluca, Matteo and Mattia who have always encouraged and supported me, making me smile when times were difficult. In addition, this thesis would have not been what it is, without the contribution of unique friends and colleagues Stefan, Björn, Frode, Jan, Serena, Sabrina, Laura and all the others who have made these two years of Master in Uppsala an exciting and perfect experience.

Last but not least, a special acknowledgement goes to the two most important people of my life, my mother Hazel Macdonald and my brother Nicholas James Ceruti, for their love, constant support, help and encouragement not only in the last few months but for my whole 28 years. I am so fortunate and deeply grateful for the many outstanding opportunities you both allowed me to experience especially the ones in the last 2 years. I couldn’t have asked for more.

Finally, a loving thanks goes to my Scottish Grandmother Margaret Georgeson (for me Mags), who sadly passed away this year during my stay in Indonesia.

Uppsala, August 2016.

Michael Ceruti
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Annex

Annex I

Interview guide

This interview guide was used as a basis during the interviews: as those were semi-structured, some questions were added, removed or edited from the pre-fixed ones when talking to the various interviewees. First, I introduced the general questions asked to every respondent and secondly divided the rest into 5 sections reflecting the 5 criteria of my theory. Further, each section was subdivided into 3 categories: the RER respondents, the villagers and the NGOs clustered with the scientific and governmental interviewees.

General questions

RER interviewees

*Can you please define RER?*

*What ecological, social and economic benefits can be linked to RER?*

*What is your personal perspective and opinion about the Ministerial Decision to introduce the Ecosystem Restoration Licences?*

NGOs, Scientists and Governmental officials interviewees

*What does your organisation or department represent and what is its main functions?*

*How important is it for environmental and social NGOs or Institutes to work closely with companies dealing with restoration and conservation projects?*

*What ecological, social and economic benefits can be linked to RER?*

*What is your view about those NGOs which have first criticized RER and APRIL and now they have become one of the partners?*

Village’s interviewees

*What is your job?*

*Are you a local resident or have you migrated from another village/ area?*

*How many people is your family composed of? How many work?*

*What are the main economic incomes for the village and for the respondents?*

Inclusiveness

RER interviewees

*Are the ecological, social and economic aspects included in the project and within the various activities undertaken?*

*What is the level of engagement of the community?*

*Did RER create new jobs for local communities therefore offering different livelihoods and forms of incomes?*

*Do you perceive RER is adopting a holistic approach to conserve and restore the land of Kampar Peninsula?*

NGOs, Scientists and Governmental officials interviewees

*What kind of relationship exists between the communities and RER? Are there any challenges or conflicts?*

*What benefits or restrictions have been so far produced by the presence of RER? Are all the stakeholders involved during the decision making process?*
What is the levels of communication between the company, the government, civil society and local communities?

**Village’s interviewees**
Do you and your village feel included in the RER project? Has RER adopted a Free Prior Informed Consent before the project’s launch? Has any RER member ever visited the village and consulted or explained to someone what the potential benefits were in connection with the project? Has RER, in these three years, ever offered any jobs or hired people from this village? Do you feel that your and the village’s lifestyle and traditions been affected by the presence of RER?

**Connectivity**
**RER interviewees**
Has the RER project been useful, so far, in restoring the environment, in preserving biodiversity and offering alternative livelihoods to local communities? How is RER perceived by the community living surrounding the RER project from your perspective? What RER should do to improve the conditions of those villages? Is economic development, biodiversity conservation and forest management possible within RER?

**NGOs, Scientists and Governmental officials interviewees**
What kind of relationship does exist between the various communities and RER? IS RER-APRIL compensating the villages as promised in the MoU and are those invested the necessary infrastructure? What potential ecological, social and economic impacts can RER create? According to you, will it produce more benefits or tensions?

**Village’s interviewees**
What activities did RER conduct within your village? Are there any conflicts between your village and RER on land use? According to you, what does RER need to do in order to be considered a good project for the environment, the people and the economy?

**Equity**
**RER interviewees**
Is RER respecting tenure rights of indigenous and rural communities? Do the villages and local communities receive the same level of benefits and impacts? Is RER facing any kind of challenges or, so far, is producing only benefits for every stakeholder involved?

**NGOs, Scientists and Governmental officials interviewees**
According to you, are the villager’s rights, problems and complains being respected and listened by RER? Within some villages there are some tensions: who has the main responsibility for these tensions? The company, the government or the villagers themselves? What is the level of support from the government for the villages? Are all the villages present in the Kampar Peninsula treated the same way by RER or are there difference in terms of relationships and benefits between them?
Village’s interviewees
Are there any conflicts between your village and RER on land use?
IS RER and its partners financially sustaining your village or is it offering alternative livelihoods or jobs? Is there a proper and fair compensations from RER for the land occupied?
Are there any economic and environmental limits or restrictions imposed by RER?
Has anyone ever been threatened by the RER while undertaking your traditional activities inside the concession?

Prudence
RER interviewees
APRIL Group, the main financial partner, has pledged to invest over USD 100 million over the next 10 years on RER: Is it going to be financially sustainable in the long term to cover all these costs for just one partner?
What ecological, social and economic projects/activities are APRIL and its partners planning within RER?
What kind of preventative measures to fires, illegal logging, peatland drainage and different levels of encroachments has RER adopted so far?

NGOs, Scientists and Governmental officials interviewees
How would you evaluate the present impacts of RER in the Kampar Peninsula? What about the future ones?
What is your personal opinion about RER: do you think is the best way to protect the environment and promote economic development if applied correctly? Or is it just another restriction for local communities living on the borders of the project area?

Village’s interviewees
What was the economic and environmental situation of the Kampar Peninsula and of your village before RER started? Were the conditions better or worse?
What has changed since the arrival of APRIL with its restoration project?
In the last 3 years, are there ever been forest and peatland fires inside the RER concession?
If not, according to you, has RER and APRIL successfully prevented them?
What alternative farming and fishing strategies have you adopted in order to bypass the restrictions imposed by the government and the company?
IF you would encounter a representative of RER and you would like to express your view, what would you tell him/her?

Security
RER interviewees
Do you see anything that should be improved in the RER project? In your opinion, what RER should do to make the project more sustainable?
ERC vision and goals are to improve biodiversity conservation, empower local people and improve ecosystem productivity; would you say RER is currently or in the future will satisfy those requirements?

NGOs, Scientists and Governmental officials interviewees
Do you think RER can become a sustainable project from a socially, ecologically and economic aspect? Is sustainability possible to achieve through the ERC concept and in this case through RER?
How optimistic are you regarding RER’s project? 
What is your opinion about RER? 
According to you, what are the key factors or changes that RER need to address in order to decrease poverty and increase local welfare?

Village’s interviewees 
What is RER doing to improve the village and its inhabitants life conditions and support its development? Can you make any example of the benefits so far generated by the RER project? 
Does RER represent more a problem or a solution to the village? 
What are you expecting to benefit from RER? what can be improved? 
What changes you and your village would like to see in the future? What RER should do in order to be considered a good project and fully welcomed by your village?

Annex II 
Interviewee list 
RER-APRIL Group: 
Interviewee 1. Conservation Director, RER - APRIL 
Interviewee 2. Deputy Head of Conservation, RER – APRIL 

Scientists 
Interviewee 3. Programme Head Climate-Smart Land Use - Wetlands International 
Interviewee 4. Researcher Climate- Smart Land Use – Wetlands International 

NGOs 
Interviewee 5. Founder Director Global Canopy Programme (GCP) 
Interviewee 6. Campaign Coordinator European Environmental Paper Network 
Interviewee 7. Director Scaling Up, Riau 
Interviewee 8. Director Jikalahari, Riau 
Interviewee 9. Representative of Mitra Insani Foundation 
Interviewee 10. Environmental activist 

Governmental Organizations 
Interviewee 11. Riau Province Forest State Manager/Researcher 
Interviewee 12. Director United Nations Office for REDD+ Coordination in Indonesia 

Villages 
Interviewee 13. Fisherman and farmer, Teluk Binjai village 
Interviewee 14. Current Head of the village, Teluk Binjai village 
Interviewee 15. Past Head of the village, Teluk Binjai village 
Interviewee 16. Secretary of the village, Teluk Meranti village 
Interviewee 17. Farmer Leader, Teluk Meranti village 
Interviewee 18. Teacher Senior High School, Teluk Meranti village 
Interviewee 19. Farmer and fisherman, Segamai village 
Interviewee 20. Farmer and fisherman, Segamai village
### Annex III

#### Table results

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<th>Criteria</th>
<th>GROUP OF INTERVIEWEES</th>
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<td>RER - APRIL</td>
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| Inclusiveness | - The presence of RER creates crucial economic incomes for local communities  
- RER employs people coming from the lower social classes such as farmers and fishermen  
- The relationship with the villagers is overall good. Our aim is to avoid conflicts  
- Each Project’s partner is actively involved and participates in fulfilling RER’s aims prefixed  
- It’s not RER’s policy to impose or limit the villager’s lifestyle and livelihoods  
| RER needs to embrace sustainability, respect the environment and human’s rights in order to be successful.  
- RER needs to include the social discourse in their restoration concept  
- RER is viewed as something positive although the HTI ring plantations surrounding them risks to jeopardize the potential benefits  
| - Villagers have received little or no information about RER’s presence, potential benefits and possible integration  
- Several NGOs criticised APRIL for not adopting the Free Prior Informed Consent (FPIC)  
- Villagers are limited in accessing the forest and the peat dome due to the presence of RER and APRIL’s HTI concessions.  
- Lack of transparency, equity and inclusion in the compensation process offered by APRIL  
- Many NGOs have accused the GOI for the lack of support of the villager’s rights.  | - The villagers lack in knowledge about the meaning behind the restoration concept and the information released by RER was insufficient and scattered  
- Transparency is non-existing and members of RER started to visit the villagers for the first time in 2016.  
- RER is viewed by the majority of the villagers to be positive and necessary for the environment but they are afraid for additional restrictions.  
- No one is working inside RER and there is no communication or coordination between the GOI, the company and the villagers.  |
| Connectivity | -RER clearly adopts APRIL’s CSR which simultaneously promotes environmental conservation, economic development and sustainable peatland  
- RER can become sustainable only if it collaborates with all stakeholders and especially with the villagers.  
- Peatland degradation and destruction has been also caused by an increasing  | - The transmigration issue causes the benefits to flow outside from the Kampar Peninsula area.  
- Private companies are always prioritized over villagers in  | -After the arrival of APRIL and RER the cultivation of rice and corn was compromised due to limited access and the no “burning regulation” issued by the GOI  |
management. - The economic benefits will be produced when the Kampar Peat Dome is successfully restored and the HTI plantations sustainably managed - RER-APRIL is sharing the landscape approached adopted with the GOI and other companies. - RER seeks new forms of collaboration with scientists and experts coming from civil society that share the same RER vision - The huge pressures on peatlands are not only caused by bad land management but also by global issues such as, population growth, poverty, lack of education and increased consumption affecting rural areas.

<table>
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<th>Equity</th>
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<td>- 99% of fires spread in the Kampar Peninsula are human induced and it’s not fair to always blame the locals since this area hosts one of the highest migrant community - RER mission is to work closely with the villagers in order to regulate</td>
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<td>- The presence of RER has created social conflicts inside the villages and at times inside the same family - Some villagers have received written warnings, restriction and threats when accessing the RER concession and other APRIL</td>
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<td>- Villagers have to face significant consequences such as land degradation, environmental destruction, impoverishment and land grabbing - The compensations and the benefits generated by RER will never be enough if compared</td>
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<td>- Villagers criticise the way compensations are distributed by APRIL, which always decides where those should be directed, rather than directly giving them to the head of the village.</td>
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<td>- Villagers asked</td>
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- Changing the crop species into native ones, which have less impact on peat and do not require drainage is crucial and needed in order to restore the peat dome.
- From an ecological, social and economic perspective the ring plantations surrounding the RER peat dome are unsustainable for the pressures and the consequences they create.
- If policy adjustments occurred and market demand change, it could pressure the industry sector in order to modify their BAU model.
- Widespread scepticism surrounding RER’s project since it is worthless protecting an area while destroying another one.

- The GOI has a huge responsibility in affecting the conditions of the villagers since it has approved to release only 4000 ha of the “Forestry Village Programme” (FVP) rather than the 10000 ha asked. This programme allows villagers to sustainably manage, restore and protect the land assigned.

- Fires, land subsidence, increased GHG emissions and increased flooding and fire events will become a regular feature if peatland drainage is not stopped.
- Changing the BAU model, better governance and improved transparency are key elements to make RER successful
- RER is considered by some villagers to be a green-washing attempt because so far it hasn’t produced any benefits for them
- The villager’s lifestyle, tradition and culture has changed since the arrival of the company and its concessions.

- The village’s economic benefits will be produced when the Kampar Peat Dome is successfully restored and the HTI plantations sustainably managed - RER-APRIL is sharing the landscape approached adopted with the GOI and other companies. - RER seeks new forms of collaboration with scientists and experts coming from civil society that share the same RER vision - The huge pressures on peatlands are not only caused by bad land management but also by global issues such as, population growth, poverty, lack of education and increased consumption affecting rural areas.

| demand for pulp products - Peatlands restore themselves if the various activities and disturbances are abandoned and stopped. |
| managing land - Changing the crop species into native ones, which have less impact on peat and do not require drainage is crucial and needed in order to restore the peat dome. |
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| managing land - Changing the crop species into native ones, which have less impact on peat and do not require drainage is crucial and needed in order to restore the peat dome. |
| RER mission is to work closely with the villagers in order to regulate |
| Villagers have to face significant consequences such as land degradation, environmental destruction, impoverishment and land grabbing - The compensations and the benefits generated by RER will never be enough if compared |
| Villagers asked |

- The villager’s lifestyle, tradition and culture has changed since the arrival of the company and its concessions. - The GOI has a huge responsibility in affecting the conditions of the villagers since it has approved to release only 4000 ha of the “Forestry Village Programme” (FVP) rather than the 10000 ha asked. This programme allows villagers to sustainably manage, restore and protect the land assigned.
<p>| Prudence | their activities, avoid the ecosystem’s overexploitation and assure the major benefits for them and us. - The villager’s rights are always included and respected and we are building a transparent and friendly relationship with them. - Imposing limitations and restriction, unless forced for restoration purposes, is not contemplated by our vision. We are looking for the best solutions which will satisfy both sides. |
| Prudence | - APRIL has adopted a no fire policy in order to halt fire events that were dominating the area - APRIL has also issued the “Fire Free Village Campaign”, an awareness campaign to explain to villagers the risks related to fires and the impacts they have on the environment and their health - RER’s aim to protect the crucial concessions. - The benefits related to RER are still not visible and it’s early to state if APRIL is correctly applying its CSR - Total absence of official written documents assessing land tenure right within the villagers. - RER represents an additional competitor and there is no evidence that the villages living next to HTI concessions have experienced improved living conditions instead it is plausible a major future impoverishment. - Zero relationship between RER and the surrounding villages. - APRIL has adopted a no fire policy in order to halt fire events that were dominating the area - APRIL has also issued the “Fire Free Village Campaign”, an awareness campaign to explain to villagers the risks related to fires and the impacts they have on the environment and their health - RER’s aim to protect the crucial concessions. - APRIL project can represent a positive solution for the environmental and social problems affecting the area - NGOs warn that if APRIL adopts its BAU model the project is destined to fail. - It’s not the quantity of money invested that is important but how those are spent - Many NGOs are hoping that through the adoption of APRIL’s CSR, to the vital services peatlands provide - Villagers, due to the presence of RER and HTI concessions, are obliged to buy rice, corn and wood from outside their communities, therefore decreasing incomes and increasing costs - The GOI should give major support to the villagers by creating the right conditions for a sustainable management of their land - APRIL, throughout its history, has always been accused in lacking of transparency in the research done and published about the Kampar Peninsula area. for more support from the GOI in order to defend their rights and assist them on managing land in alternative ways - The villagers are having issues in creating a dialogue between the GOI and the company. - Managing land without using fires as they were used to, implies major future costs for the entire community. - Villagers have always been discriminated and accused to be the responsible ones of setting fires and peatland degradation. - APRIL has offered alternative livelihoods by hiring some villagers in their HTI concessions. |
| Prudence | - Scientists underline the importance to introduce dams to regulate the water table, abandon any kind of activities on peatland and substitute the unsustainable crops such as Acacia plantations with native ones - There is the need from RER to embrace a community land management discourse where villagers |
| Prudence | - APRIL provides a boat service to take the village’s kids to school. Through the compensations it also grants scholarships, builds mosques and it is used for various ceremonials - Before the arrival of APRIL no social tensions or competition existed within the interviewed villages. Every village was |</p>
<table>
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<tr>
<th>Security</th>
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<tr>
<td>- The aim of RER and APRIL is to reach the one-to-one target which implies to conserve the same amount of ha as the ones in the HTI concessions</td>
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<td>- Eco-tourism is a future activity APRIL would like to launch within the RER project, which could represent an extra opportunity of development for local communities</td>
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<td>- RER is still not sustainable from an economic perspective since APRIL is the only investor and so far</td>
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<td>- Some villagers have reported concerns about their security since there have been several cases of threat by APRIL’s security guards towards them.</td>
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<td>- Many NGOs believe that RER will only increase further tensions and social conflicts rather than providing development and alternative livelihoods</td>
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<td>- Lack of good governance and support from the GOI is also jeopardizing the environmental and</td>
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<tr>
<td>- APRIL is accused to have a hidden agenda behind RER that has no interest in saving or restoring the environment</td>
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<td>- Alternative ways of managing peatland without ending business is possible although no one are applying nor investing on them</td>
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<td>- APRIL is investing millions of USD in communication and public relations to show its commitments to protect and restore the environment. However there is</td>
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<td>- The village’s land area are becoming smaller and this complicates their conditions and increase poverty</td>
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<td>- Many villagers believe RER to be an additional restriction, a green washing attempt, which the main benefits generated are directed solely to license-holders.</td>
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<td>- There is a widespread hope for a more efficient support from the GOI and the company in offering alternative</td>
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area inside the Kampar Peninsula called the peat dome.  
- RER manages this peat dome through its eco-hydro system, an approach which makes them controlling its water table.  
- RER can generate the necessary and needed benefits, although the fires present inside the concessions of their suppliers proves that so far they haven’t been successful  
- collaborate and work along with APRIL and the other stakeholders.  
- The scientific community is positive and welcomes RER although there are doubtful regarding the successes of it since no other project before has ever managed to sequester carbon or completely restore degraded peatlands.  
- The project still remains unsustainable because if APRIL doesn’t phase out the HTI plantations surrounding the project it will nature that will phase out their activity and business.  
- Some villagers satisfied with what they had - The head of various villages are committed to learn more about RER and how can they benefit from it since they are concerned about the village future
| all the investments made have produced little or no returns - APRIL is working on changing the sceptical perspective that villages have towards them - APRIL through RER is open to any form of constructive criticism which would help them to create the necessary pressures to make the project as perfect as possible | social security - NGOs would like to propose the “Wakatane Mechanism” where indigenous or local communities rights are integrated in forest conservation programmes. | no guarantee that these sustainable actions will be kept in the future. - Fire prevention and stopping encroachment levels are two key factors the GOI and the company should work on by including them in the green investments and in the sustainable certifications. | incomes, managing land without burning and create major incomes. |