

Green capitalist economies through a focus on labour: enclosures, exploitation and class conflict in Senegal

Rocío Hiraldo

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University of East Anglia
School of International Development

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This thesis is 76,364 words long

Abstract

The recent promotion of monetary incentives for preserving the environment is being interpreted as a means of advancing capitalist interests. Until present most research on this topic has concentrated on the strategies used by conservation organisations, private companies and development institutions, while little is known about how people working to make a living (hereafter “workers”) are experiencing the development of green economies. This thesis seeks to fill this gap. It studies how the conditions of workers’ labour are being shaped by the social relations of production enabling the development of nature-based tourism and forestry-related payment for ecosystem service (PES) projects in a group of villages in the Sine-Saloum delta, Senegal.

Based on a six-month period of primarily qualitative fieldwork research and drawing conceptually on Marx’s critique of political economy, it explores three ways in which the social relations of capitalist production in this green economy have shaped labour conditions: a) the privatisation of 1800 hectares of mangrove forest through the creation of a tourism-oriented protected area; b) the activity of work in nature-based tourism and forestry-related PES projects; and c) workers’ mobilisations against exploitation and expropriation.

The thesis shows how, through expropriation, exploitation and class conflict, the green economy benefits capitalist owners while separating workers from the ownership of their labour. Forest privatisation belongs to a broader process of primitive accumulation where workers enable capital accumulation through their adaptations to capital. Production in the green economy is based on social relations that perpetuate poverty, inequality and neo-colonial relations in neoliberal Senegal. The different contribution of nature-based tourism and PES projects to capital accumulation and the importance of class conflict, workers’ disagreement and hope in this case study emphasise the heterogeneity and unpredictability of green economies. Socially-committed researchers will benefit from integrating labour and the relations of production in their analyses.

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List of French and local terms

Bolong: a diffuse network of mangrove channels.

Boubou: a long, colourful and loose-fitting garment worn in parts of Africa.

Bouye: the baobab fruit.

Campement: small tourist accommodation.

Ditakh: local fruit.

Surga: sharecropper

List of acronyms

AMI: African Multilateral Institution

AbD: Accumulation by Dispossession

BRICS: Brazil, Russia, India, China and South Africa

CDM: Clean Development Mechanism

CFA franc: Financial African Community franc

EDA: European Development Agency

GDP: Gross Domestic Product

GHG: Greenhouse Gas

HIPC: Highly Indebted Poor Country

IMF: International Monetary Fund

NGO: Non-Governmental Organisation

PES: Payment for Ecosystem Services

PRSP: Poverty Reduction Strategy Paper

REDD+: Reducing Emissions from Deforestation and forest Degradation and enhancement of carbon stock

RFGI: Responsive Forestry Governance Initiative

RSQ: Research sub-question

WTO: World Trade Organisation

How can you make poverty history without understanding the history of poverty?
(Shivji, 2007, p. 37)

*All that the human race has achieved, spiritually and materially, it owes to the
destroyers of illusions and to the seekers of reality*
(Fromm, 1962, p. 151)

1. Introduction

1.1. Introduction

The preservation of nature is increasingly being promoted as conditional upon the provision of monetary incentives (Castree and Felli, 2012; Heynen and Robbins, 2005). In this context new forms of environmental conservation are emerging, among others nature-based tourism and payment for ecosystem service (PES) schemes¹. They are being interpreted as a means of promoting capitalist interests through the green economy² (Böhm et al., 2012; Brockington and Duffy, 2010; Bumpus and Liverman, 2008; Büscher and Fletcher, 2015; Felli, 2014a; Neves, 2010).

Despite being a fundamental aspect of everyday life and of capital accumulation processes, labour and people working to meet their needs (hereafter ‘workers’ or ‘working class villagers’)³ have remained largely absent in recent analyses of green capitalist economies. This thesis seeks to fill this gap. It does so by looking at the case of Niomi, a group of villages located in the Southern part of the Senegalese Sine-Saloum delta, and particularly at two villages in this area called Boko and Dioube⁴. In these villages the conditions of workers’ labour have been changing following a rise in the number of nature-based tourism businesses and forestry-related PES projects in the local area since the early 2000s. Fishermen and mollusc collectors living in these villages have lost access to a highly productive *bolong* (a diffuse network of mangrove channels) after the creation of a tourism-oriented protected area in 2004. All natural resource extractive activities have been forbidden in 1800 hectares of mangrove forest

¹ Nature-based tourism refers to tourism that involves conservation measures or that uses already preserved natural landscapes as its main tourism attraction. PES schemes involve the payment to governments, organisation, rural people and other actors in exchange for a specific environmental service.

² The term ‘green economy’ refers here to the integration, of concerns about human-induced environmental degradation in the realm of production, consumption, distribution and exchange in one way or another (i.e. through discursive practices about the economy and/or through actual changes in the economy). The term ‘green capitalist economies’ used below refers to the use of the green economy as a means to promote capitalist interests. Its use is not based on the assumption that today there are other green economies that exist outside capitalism. Rather, it is a way of distinguishing green economies that are aimed at promoting capitalist interests (including profit and the depoliticisation of the environmental problems associated with capitalist commodity production) from those that are not.

³ As it will be discussed further in this thesis (chapter three), workers do not only include those producing commodities for a capitalist owner, but, more generally, those who need to work to make a living. Although state officers and people working for NGOs and projects also need to work to make a living, they are not the focus of this research since almost none of the people in these villages has this type of occupation. I also integrate non-paid care and domestic work as part of what being a worker means. The research focuses mainly on adults, but the relationship between them and the children and elderly people living in their households is considered.

⁴ In order to protect informants, I have changed their names, the names of the villages and the local area where the research took place.

and in 5000 hectares of terrestrial forest. Today, the only allowed users of the forests in this 6800-hectare surface are tourists visiting the protected area.

Many people living in Boko and Dioube have started working in this and other local nature-based tourism businesses. Others have started producing and selling goods and services to tourists on their own account such as meals, handicrafts, jams and other souvenirs, while the two wealthiest men in Dioube have started employing other villagers in this sector. Following the implementation of three PES projects started in 2009, European governments have started paying villagers for collecting and planting mangrove seeds, in some cases as a means of offsetting carbon dioxide emissions generated by private companies.

This thesis studies these changes through a focus on labour. More specifically, it investigates the relationship between changes in the conditions of workers' labour and the formation of the social relations of production in green economies. I ask: how are the conditions of workers' labour changing as the social relations of production in nature-based tourism and payment for ecosystem service projects emerge, survive and are challenged? I explore this question by drawing ontologically and conceptually on Marx's critique of political economy.

When studying this question the research has paid particular (yet not exclusive) attention to the social relations of capitalist production (i.e. those that make capital accumulation possible). The reason to do so is due to the importance of these relations in the context studied and to the connection that scholars draw between capital and the recent development of nature-based tourism and PES projects globally (Böhm et al., 2012; Brockington and Duffy, 2010; Büscher and Fletcher, 2015; Igoe et al., 2010; Felli, 2014a). The importance of the social relations of capitalist production in this research is also given a broader context where capital accumulation processes have become central in the functioning of African economies, and more specifically of the Senegalese economy (Bond, 2006; Boyce and Ndikumana, 2012; Carmody, 2011; Dembele 2003; Mbembe, 2016).

1.2. The start of a research journey: defining the thesis agenda

I developed an interest in this research through a journey that started long before the start of this PhD. During my master's degree in development studies I had the chance to understand issues I was concerned about: the social drivers of environmental change, socio-economic inequalities and popular participation. My master's thesis studied the relationship between the forestry-related climate change mitigation programme REDD+ (Reducing emissions from deforestation and forest degradation and enhancement of carbon stock) and forest-dependent people's ability to take part in forestry decision-making processes.

After completing this degree there were two things I still wanted to learn. I wanted to understand how capitalist development worked and I wanted to understand what living in a poor country meant. The first objective led me to start reading Marx's *Capital*, a book that was rarely or not even mentioned during my bachelor's and master's degree. The second objective led me to look for a job in Sub-Saharan Africa with local organisations. I moved to Senegal to work for a year with the Environment and Development team of the Senegalese non-governmental organisation (NGO) ENDA. Once there I had the chance to become one of the researchers of the Responsive Forestry Governance Initiative (RFGI), a research programme led by the Council for the Development of Social Research in Africa (CODESRIA) in collaboration with the University of Illinois-Urbana Champaign. The programme enabled me to continue developing my research interests as it was aimed at exploring the local democracy effects of forestry-related climate change mitigation projects currently being implemented in Sub-Saharan Africa.

My engagement in this programme led me to Niomi. I chose to do my RFGI research in this area because it was the location of the first reforestation carbon offset project implemented in Senegal. This was a Clean Development Mechanism (CDM) project, that is, a project enabling private companies from Annex I countries⁵ to earn carbon credits and potentially sell them in global markets by carrying out climate change mitigation activities in non-Annex I countries (UNFCCC, 1997).

In April 2012, six months before the start of the thesis, I went there to do a 10-day-fieldwork visit. My host was Abdou, the local partner of the NGO implementing the carbon project. The day I arrived a Senegalese wrestling match was taking place and Abdou's family invited me to go. I enjoy watching them, so I accepted the invitation. The organiser of the event started giving a brief speech and then called to the arena several military men, all wearing their honorary badges. With them came Abdou, wearing a boubou⁶ made of what looked like an expensive fabric. They were presented as important personalities in the village. The griots⁷ started singing and several women stood up and gave them notes. Among them was Abdou's wife, also wearing a beautiful and apparently costly boubou.

The next day I began conducting informal interviews in the area. I knew that the carbon offset project that I was studying had been implemented by the same organisation that had created Bintang, a tourism-oriented protected area, nine years previously. I therefore started my research by analysing the genesis and evolution of this nature sanctuary. This space was created as a result of a development project financed by a

⁵ Annex I countries are members of the Organisation for Economic Cooperation and Development and Economies in Transition and non-annex countries are therefore those that are not part of the Annex I countries group (Yamin and Depledge, 2004, p. 24).

⁶ A long, colourful and loose-fitting garment worn in parts of Africa.

⁷ Griots are individuals whose role is to keep an oral history of particular places and people and to entertain with poems and songs.

European development agency and implemented by a non-governmental organisation (NGO) called *Atlantis*. Atlantis' leaders included a French man and a Senegalo-Lebanese man who has become a popular environmentalist in the Senegalese media for his role in the preservation of mangrove ecosystems in the country. In 2012, after the creation of a new government in Senegal, he was appointed Minister of the Environment by the new Senegalese president Macky Sall.

The interviews I had during this preliminary field research suggested that there were a number of conflicts around this protected area. Rural councillors suggested that Abdou had been appropriating some of the revenues generated through the protected area and that villagers were not seeing a benefit from the protected area. In addition, when asked about these conflicts, a villager who had worked for Atlantis in the implementation of the carbon project suggested that people living in Gani and Dioube, two of the closest villages to the protected area, were "complicated". On the other hand, Abdou and his brother-in-law, who had been managing the *campement* (French word locally used to refer to small tourist accommodations) located in the protected area for several years, suggested that by trying to tax Atlantis for the use of the land where the protected area was located, the rural council⁸ was trying to appropriate the revenues coming from the protected area.

I wanted to understand these issues in further detail and, particularly, from the perspective of the majority of villagers, that is, from the perspective of those who did not belong to the rural council and Atlantis. In July 2012 I came back to Niomi after finding a new gatekeeper, a fisherman who lived in Gani. My interest in going to Gani was also due to the characterisation of its people by the Atlantis' officer as "complicated". I lived for a month in this village, trying to gain first-hand knowledge of villagers' experiences of the carbon project and the protected area.

Through an open-ended questionnaire completed by 60 villagers I realised that none of the villagers had been informed about the carbon credit objective, they had been a mere means for the achievement of the project: the plantation of a certain amount of mangrove hectares. I could also notice villagers' growing reliance on nature-based tourism, especially in Dioube (the village next to Gani) and in Boko, a small village situated on the island where the protected area is located and connected to Dioube through the mangrove forest. I had discussions with some of the villagers employed in the campement in Bintang protected area, becoming aware that, although villagers were the ones providing the services to tourists coming to the protected area, Atlantis' leaders were appropriating the revenues. Two of them told me they had been fired after complaining about the redistribution of the money generated through the protected area and about their working conditions there. Several fishermen told me they had been imprisoned for having been fishing in the protected bolong.

⁸ Rural council is the translation of the French term 'conseil rural', which is used to designate local governments in rural areas of Senegal.

I then realised that these problems were not simply due to a lack of mechanisms of downwards accountability and a lack of responsive local partners, as suggested by the RFGI conceptual framework of the research programme (Ribot et al. 2008; Ribot, 2011). The social relations around the organisation of production were playing an important role in the dynamics observed. More importantly, they were associated with Atlantis' leaders attempts to control the management of the protected area and therefore the profits generated through it.

Labour had been a central aspect of the ways in which villagers from Boko and Dioube experienced the development of nature-based tourism and PES projects, as they became new sources of work for many of them. In addition, the conservation rules in the protected area had forced fishermen and mollusc collectors to work in less productive bologs and therefore to work more to secure subsistence. As a consequence, some of them engaged in additional economic activities while others decided to migrate. Moreover, conflicts around the creation of the protected area were influenced by the uneven distribution of not only money, but also labour.

1.3. The global context: emerging green capitalist economies and capitalist expansion in Senegal

This use of a protected area as a means of profit-making and the use of a mangrove reforestation project as a means of offsetting of emissions are not exclusive of this Senegalese location. Since the last two decades scholars have been providing evidence of the various ways in which money is increasingly being used and promoted as the main solution to address global warming and environmental degradation. This is evidenced by the development of nature-based tourism, ecotourism⁹, the creation of tourism-oriented protected areas, the implementation of forestry-related PES schemes such as reforestation CDM and REDD+ projects, fundraising events for conservation and the creation of virtual animal adoption mechanisms (Benjaminsen and Bryceson, 2012; Böhm and Dabhi, 2009; Böhm et al., 2012; Brockington and Duffy, 2010; Brockington et al., 2008; Brockington and Scholfield, 2010; Bumpus and Liverman, 2008; Büscher and Dressler, 2012; Cavanagh and Benjaminsen, 2014; Corson, 2011; Dressler, 2011; Duffy, 2013; Fletcher and Neves, 2012; Jones, 2009; Kelly, 2011; Liverman, 2004; Lohmann, 2001; McAfee and Shapiro, 2010; McAfee, 2012; Neves, 2010; Ojeda, 2012; Pawlizeck and Sullivan, 2011; Robertson, 2004; Robertson, 2007; Sullivan, 2013; Vlachou, 2004).

In this context, private companies and banks are becoming increasingly involved in environmental conservation and the conservation of already-preserved landscapes, often

⁹ Brockington and colleagues (2008, p. 134) distinguish ecotourism from nature-based tourism and define the former as 'encompassing a much wider set of concerns than nature-based tourism about the environmental impact of accommodation and the levels of local ownership, amongst other things'.

acting in partnership with international financial institutions, multilateral as well as bilateral development agencies from the global North and central governments in the global South (Brockington, 2012; Brockington and Duffy, 2010; Brockington and Scholfield, 2010; Corson, 2010; Corson and Macdonald, 2012; Duffy, 2013, 2015; Fletcher and Neves, 2012; Goodman and Salleh, 2013; Holmes, 2010; 2012; Igoe et al., 2010; Kenis and Lievens, 2016; Vlachou, 2004). Conservation NGOs, which have increased dramatically in Sub-Saharan Africa since the 1980s, are also actively involved in the making of green capitalist economies, by partnering with corporations and by using discourses and strategies similar to those of corporations (Brockington and Scholfield, 2010; Holmes, 2012).

Critical scholars suggest that these developments are not exclusively or necessarily a response to concerns about environmental degradation and global warming. Instead, they serve to promote capitalist interests, including profit, the avoidance of restrictions in greenhouse gas (GHG) emissions associated with capitalist commodity production processes and the creation of an “environmental fix” enabling the de-politicisation of the ecological and climate crises generated through capitalist production and consumption (Bachram, 2004; Böhm et al., 2012; Büscher et al., 2012; Felli, 2014a; Fletcher and Neves, 2012; Ojeda, 2012).

Climate change mechanisms such as emission trading are seen as having a neo-colonial and imperialist character. They allow the wealthiest and most polluting countries the right to emit greenhouse gases at current levels and hence maintain over-consumptive patterns in the global North and environmentally damaging capitalist production processes in the global South¹⁰ (Bachram, 2004; Brand, 2016; Bryant et al., 2015; Büscher et al., 2012; Felli, 2014a; Liverman, 2009; Lohmann, 2005). Scholars have also noticed sub-imperialist processes in the making of green economies through which elites from the global South, namely from the BRICS¹¹ countries, push for the extension of carbon markets (Böhm et al., 2012).

Given Marx’s contribution to the theorisation of capital accumulation processes, many scholars have turned to Marx and to the work of various authors drawing on Marx’s theory (Foster and Clark, 2009; Gramsci, 1971; Harvey, 2003; Moore, 2011) when critically analysing green capitalist economies. Some authors have used Marx’s term ‘the metabolic rift’ to highlight the paradox of the expansion of capital through the promotion of environmental sustainability (Böhm et al., 2012) and to show the negative effects of nature-based tourism on ecological cycles (Neves, 2010). Others have turned to Marx’s term ‘primitive accumulation’ and Harvey’s notion of ‘accumulation by dispossession’ to explain the recent appropriation of peasants’ and indigenous’ lands

¹⁰ Global South refers here to those territories that have been experiencing imperialism (i.e. the imposition, within the dominated countries, of a government prone to the development of economic relations favourable to the interest of dominating countries) within the last 50 years. This is not to exclude imperialist relations within the global South.

¹¹ BRICS stands for Brazil, Russia, India, China and South Africa.

through the creation of tourism-oriented protected areas and forestry-related climate change mitigation programmes (Benjaminsen and Bryceson, 2012; Corson, 2011; Kelly, 2011; Ojeda, 2012). Gramsci's term 'hegemony' has been used to refer to the networks between corporations, conservation NGOs and multilateral development agencies in the making of green capitalist economies (Goodman and Salleh, 2013; Igoe et al., 2010). The socio-political dynamics around environmental regulation and climate change mitigation have also been explored through a focus on the notion of class as understood by Marx (Vlachou, 2005; Vlachou and Konstantinidis, 2010).

These scholars have not explored in equal depth the implications of green capitalist economies on labour and yet labour is a central aspect of Marx's critique of political economy and workers' lives. Similarly, research about capital accumulation processes in Senegal has not explored the implications of these processes for the conditions of workers' labour, with few exceptions (see Cross, 2013; Mackintosh, 1989). Instead, the focus has been on high-level actors, including 'rent-seeking indigenous bourgeoisies who create barriers for capital accumulation at the local level' (Boone, 1990; Thioub et al., 1998), rural capitalists (Oya, 2007; Baglioni, 2015), foreign capitalists who exercise positions of dominance in Senegalese national and political affairs (Diouf, 1992) and an emerging class of Senegalese businessmen (Fatton, 1986; Diouf, 1992). In addition, research about local politics in rural Senegal (Bierschenk et al., 2000; Ribot, 1999; Ribot, 2009; Poteete and Ribot, 2011) has tended to neglect the role of the social relations of capitalist production and, more specifically, the role of workers' labour, in such dynamics.

In recent years, some scholars have started integrating labour into their analyses of green capitalist economies, exploring trade unions' positions with regards to the green economy (Barca, 2015; Felli, 2014b; Räthzel and Uzzell, 2012; Stevis and Felli, 2015) and proposing a "political ecology of labour", which would occur at three analytical levels:

- (1) the landscape, to encompass past human labour and social relationships incorporated into the land;
- (2) the workplace, in its multiple forms and settings, as the context in which a working-class ecology unfolds, with its peculiar contradictions and political meanings;
- and (3) trade unions and labour organisations, as the place where a working-class ecological consciousness takes (or not) expression and evolves (or not) into political action (Barca, 2015, p. 387).

Despite this recent attention to labour, there are no case studies exploring changes in the conditions of workers' labour in relation to the emergence of green capitalist economies. This research fills this gap by studying the development of nature-based tourism and forestry-related PES projects in Niomi through a focus on labour. By studying this question the research also seeks to contribute to the wider literature on the implications of contemporary capital accumulation processes for rural transformations

in the global South (Akram-Lodhi and Kay, 2010; Araghi, 2009; Koopman, 2012; Moyo, 2008).

1.4. Conceptual starting points

Given the focus of this research on the relationship between green capitalist economies and labour, this section briefly introduces the concepts of capital and that of labour by drawing on Marx's critique of political economy. It also discusses the implications of the relation between these two concepts for the research strategy here pursued.

Capital does not exclusively refer here to stocks of capital and the pursuit of high rates of profit in the market economy, as suggested by Weberian definitions of this concept (Weber in Greenberg and Park, 1994). In this thesis capital is seen as a type of commodity production driven by the imperative of accumulation where capitalists obtain profit through the valorisation of the unpaid time and effort that workers spend producing commodities for them, also known as *surplus value*. This kind of commodity production process is also a social relation based upon capitalist owners' exploitation of workers' labour and appropriation of their product (Marx, 1967, pp. 247-257). This relation between capitalist owners and workers producing commodities for them results from the historical appropriation by a sector of the population of the means of production and by the subsequent separation of workers from the means they needed to survive. This process led to the division of human beings into two types (*classes*): workers and non-workers. Workers are those who need to work to subsist and, where lacking means of production, need to work for those owning the means of production. Non-workers are those who, after having appropriated the means of production that workers require for securing subsistence and concentrating such means as private property, meet their consumption and wealth needs through the use of workers' labour. Capitalist owners belong to this class of non-workers (Marx, 1967; 1973; 1981; Marx and Engels, 1985). Marx ironically described the formation of these two classes as follows:

‘Long, long ago there were two sorts of people; one, the diligent, intelligent and above all frugal elite; the other, lazy rascals, spending their substance, and more, in riotous living...thus, it came to pass that the former sort accumulated wealth, and the latter sort finally had nothing to sell except their own skins. And from this original sin dates, the poverty of the great majority who, despite all their labour, have up to now nothing to sell but themselves, and the wealth of the few that increases constantly, although they have long ceased to work’ (Marx, 1967, p. 873).

Capitalist commodity production processes reproduce this class division and relation. Driven by the imperative of accumulation, capital can only survive through the start of a new commodity production cycle. Once commodities are sold capitalists reinvest a

portion of the profit they obtain in a new production process. By doing so, they reproduce their ability to live (without working) and make profit through the use of workers' labour as well as workers' dependence on the means of production and subsistence (i.e. money) that capitalists provide to them to survive.

Processes of capital accumulation, as defined here, are inseparable from processes of poverty generation/perpetuation because non-workers accumulate capital by appropriating surplus from the poor and by appropriating the land that workers rely upon for their livelihoods (Akram-Lodhi and Kay, 2010a; Akram-Lodhi and Kay, 2010b; Bernstein and Byres, 2001; Da Corta, 2008; Harriss-White and Heyer, 2010; O'Laughlin, 2009; Wood, 1995, pp. 76-77). Thus, through the study of green capitalist economies this research seeks to understand and expose not only their implications on workers' everyday lives, but also the history of poverty and inequality in Senegal.

The focus of this thesis on labour is justified by the three main characteristics of the labour concept. First, labour is the creator of use-values (i.e. the useful goods and services that human beings need) and an eternal natural necessity since human beings rely on it for their survival and wellbeing (Marx 1967, p. 133). Hence, for people who need to work to subsist, as it is the case of poor people, labour is a daily repeated activity and therefore a central aspect of their lives. Through the study of labour we can therefore document (changes in) workers' everyday lives in particular contexts. Second, the conditions of workers' labour are the expression of the social relations through which human beings organise to produce their needs within a given time and location. Through the labour process individuals interact with the rest of the world, with other human beings and with non-human nature (Marx, 1967, pp. 283-290, 1973, p. 83). Therefore, the study of labour through the lenses of Marx enables us to explore the functioning and history of the social relations of capitalist production and green capitalist economies. Third, looking at labour enables us to explore the changing relations of humans to non-human nature because it is a process by which humans mediate, control and regulate the metabolism between them and nature (Marx, 1967, p. 283). This research concentrates on the two first aspects of the labour concept.

Since there is a wide range of interpretations of Marx's critique of political economy the ontology and epistemology of this thesis follow my own understanding of his work. Such understanding has come not only through reading, but also through the processes observed during fieldwork and the analysis of primary data collected. In line with scholars within the Open Marxism tradition (Bonefeld et al., 1992; Dinerstein and Neary, 2002; Holloway, 2005), this research does not use Marx's theory in order to validate it, but as a basis that can be brought into question and enriched through the analysis of concrete realities. The research also looks at capital accumulation processes as relational, based on human agency, made of open systems, non-static and subject to internal contradictions (Bonefeld et al., 1992). The social relations of production and the conditions of workers' labour are studied here beyond the act of producing use-values (i.e. the time and effort that workers need to spend to produce them). Thus, it looks at

these relations as connected to consumption, distribution and exchange as well as in connection to other social relations, cultural patterns and ecosystem dynamics. Finally, the perspective here followed goes beyond dichotomous conceptualisations often found in the Marxist literature such as free versus unfree labour, capitalist versus non-capitalist and economic versus extra-economic coercion.

1.5. Research methods and techniques used for primary data collection

This research is a case study of the relationship between labour and the emergence of green economies exploring the development of nature-based tourism and forestry-related PES projects in Niomi, Senegal. Following the idea that the social relations of production can only be studied in process, the research has studied the development of nature-based tourism and forestry-related PES projects in Niomi in relation to the processes through which the social relations of this green economy have emerged, survived and been challenged. To study this green economy in process, the research has studied changes in workers' labour within a ten-year period between 2003, the year before the creation of Bintang protected area, and 2013, the year that primary data collection took place.

Through this perspective the thesis investigates the relationship between changes in villagers' labour and the development of nature-based tourism and forestry-related PES projects in Niomi by studying three of the ways in which the social relations of capitalist production shape the conditions of workers' labour: a) the separation of workers from the conditions of their labour through non-workers' appropriation of the conditions of production (also known as primitive accumulation); b) working conditions and their relation to non-workers' use of workers' labour (also known as exploitation); c) workers' collective mobilisation against expropriation and exploitation¹² and non-workers attempts to avoid such disagreement with the social relations of capitalist production (class conflict). Each of these three aspects is discussed in a data chapter. These chapters are organised as papers.

The research draws upon a one-month preliminary fieldwork phase and a five-month fieldwork period between November 2013 and the end of March 2014, when I lived in the villages of Boko and Dioube. Data were collected through different research techniques, including open-ended questionnaires, semi-structured interviews, group discussions, observation and informal discussions. Although during the preliminary fieldwork phase informants were villagers, officials from state bureaucracies, development agencies, NGO leaders and their local partners, the five-month fieldwork period has focused on people living in Boko and Dioube, most of whom are workers. Data analysis has been qualitative as well as quantitative (descriptive statistics).

¹² These three aspects are in line with Barca's proposal for a political ecology of labour (Barca, 2015) above outlined. However, as the foregoing chapters will discuss, this thesis studies these aspects of the labour concept from a broader perspective that goes beyond land, the workplace and workers' organisations.

The research has not assumed that the social relations of capitalist production are driving the development of nature-based tourism and PES projects in Niomi. Instead, I have first explored the presence of these relations within the context of nature-based tourism and PES projects studied and in villagers' everyday lives. To do so, I have mapped villagers' economic activities, the amount of time and effort they spent on securing subsistence as well as on reproduction (i.e. domestic and care work), changes in the conditions of their labour and their connection to the social relations of capitalist production. In addition, I have related the conditions of workers' labour to processes of capital accumulation shaping government policies in Senegal. The research mapped changes in workers' labour by taking into consideration other social relations that shape the labour process, in particular gender relations, the state and hierarchies around the labour process in the green economy.

1.6. Thesis overview

The thesis is organised as follows. Chapter two introduces the global and national context of the research. It discusses the relationship between rural transformations since 1980 until 2016 in the global South, Sub-Saharan Africa and Senegal, the emergence of green capitalist economies and the advent of neoliberal processes of capital accumulation. Chapter three binds the three papers conceptually and methodologically. It presents the ontology, epistemology and conceptual framework of the thesis. It outlines the three research sub-questions of the thesis and discusses the research strategy followed during primary data collection and analysis. Chapter four introduces the two villages studied discussing their foundation as well as villagers' main economic activities and overall changes in their labour conditions. The following three chapters (chapters 5-7) explore changes in the conditions of workers' labour following the development of nature-based tourism and forestry-related PES projects in Niomi. Although the methodology chapter binds the three papers conceptually, each paper introduces the reader to the debates around the research problem of the topic addressed in the chapter.

Chapter five studies changes in fishermen's and mollusc collectors' labour following the privatisation of the bolong through the creation of Bintang protected area. It locates their adaptations to this privatisation in a broader context in which primitive accumulation (i.e. capital's enclosures) has been shaping the conditions of villagers' labour. It introduces Marx's concept 'primitive accumulation' and Harvey's term 'accumulation by dispossession', discussing how they are used in recent work exploring the agrarian changes derived from large-scale land expropriations. It then analyses changes in fishermen's and mollusc collectors' labour within a ten-year period in the 2003-2013 period and their relation with capital's enclosures shaping the local economy. The chapter draws analytical connections between these changes and the forms of alienation identified by Marx (1959).

Chapter six explores how the social relations of production in forestry-related PES projects and in nature-based tourism have been shaping villagers' working conditions in these contexts. It locates this research problem in the broader literature discussing the accumulation of capital in the context of the green economy and the commodification of nature. The data analysis in this chapter starts by distinguishing between those who purchase labour-power and those who work to provide the goods and services that make this green economy, relating this class division to agrarian crises associated with capital accumulation processes. It then studies (changes in) villagers' working conditions in PES projects and in the nature-based tourism sector and workers' responses to these conditions. Working conditions and the social relations of production in the green economy are analysed by drawing on Marx's concepts of commodity, value, rent and capital.

Chapter seven studies workers' mobilisations against exploitation and expropriation through forestry-related projects implemented in Niomi. It studies these processes in connection to the ways in which capitalist owners and institutions leading these projects avoid workers' disagreement with exploitation and expropriation. The chapter situates this research problem within recent research on democracy and social justice in forestry-related projects and in green economies. It starts by exploring the relationship between the distribution of decision-making power in forestry projects implemented in the area in the 2003-2013 period and the social relations of production within them. It then focuses on the case of Bintang protected area given its greater relevance for villagers' everyday lives. Chapter eight concludes with a recapitulation and a reflection of the research findings and discusses the main political and theoretical implications of this thesis.

2. The global and national context: a focus on neoliberalisation

2.1. Introduction

The conditions of labour within a particular spatio-temporal context are intrinsically connected to the social relations of production within such context (Marx, 1973, 83-90). Understanding changes in the conditions of workers' labour in Dioube and Boko following the development of nature-based tourism and forestry-related PES projects therefore requires situating this question within the broader social relations around which humans organise to produce their needs today.

Scholars differ about the specific social processes generating rural transformations in the global South in the 21st century (Akram-Lodhi and Kay, 2010b). Nonetheless and despite arguments that agrarian transformations should be investigated diachronically (Moyo and Yeros, 2005; Araghi, 2009), all place particular importance on neoliberalisation and its associated globalisation of capital. Neoliberalisation is not only considered as driver of transformations in rural life since the last four decades, but also as a central driver of the recent commercialisation of environmental conservation (Büscher et al., 2012).

This chapter locates the research question of this thesis within the context of neoliberalisation. The first section discusses the origin of this global political economic process and its main features. The second section discusses the rural transformations that have gone hand in hand with neoliberalisation processes in the global South. The third section introduces the process of neoliberalisation in Senegal through a focus on state policies within the 1980-2016 period. The fourth section relates the development of neoliberalisation with the recent increase in conservation NGOs and with the spread of nature-based tourism as well as PES projects across the world. The last section concludes.

2.2. Neoliberalisation: origins and main characteristics

Neoliberalisation is seen as a political process aimed at restoring the power of global economic elites (Duménil and Lévy, 2001, 2004; Harvey, 2005, p. 19). Its origins are rooted in the diminution of the power of these elites since the 1940s and in the economic crisis of the 1970s. After World War II, the US and UK had initiated an embedded-liberalism strategy that reflected a class compromise between capitalists and the working class so that domestic peace would be guaranteed (Harvey, 2005, pp. 9-13).

This strategy was based on Keynes' idea of a balance between private initiative and state intervention. It was characterised by state control over the free mobility of capital, expanded public expenditures, welfare state-building (i.e. social protection concerning health, accident insurance, unemployment and retirement), improvement in workers' labouring conditions, relative autonomy of corporate managers and limitation of the financial activity of commercial banks.

Finance¹³ as well as liberal economists such as Hayek and Friedman opposed state-led regulations of capital accumulation processes. They fought to find political support to restore the privileges of financiers (Duménil and Lévy, 2001; Harvey, 2005, pp. 10-11). Thus, in 1973 there was a neoliberal experiment started in Chile following an orchestrated coup d'état backed by the CIA, the US secretary of state and US corporations. Economists trained under the principles of neoliberalism helped reconstruct economic policies in the country (Harvey, 2005, pp. 7-9).

Several years after this coup, neoliberal reforms started in the US and the UK, materialising in dramatic reductions in corporate taxes, budget cuts, rise in interest rates and attacks on trade union and professional power. The role of central governments in environmental regulation, occupational safety, health, airlines and telecommunications was substantially diminished (Harvey, 2005, pp. 9-26). This did not mean a reduction of state power. States have been the agents of the imposition of neoliberal reforms in all countries. Some scholars have even observed a stronger role of the state through neoliberalisation (Duménil and Lévy, 2004).

Harvey (2004) argues that these measures are associated with capital's 'overaccumulation problems' during the 1970s. Overaccumulation within a given territorial system means a condition of surpluses of labour (rising unemployment) and surpluses of capital (registered as a glut of commodities on the market that cannot be disposed of without a loss, as idle productive capacity, and/or as surpluses of money capital lacking outlets for productive and profitable investment) (Harvey, 2004, p. 64)¹⁴. Given capitalists' inability to sell commodities and their unwillingness to hire labour, new forms of accumulation were needed different than the profit generated through capitalist production.

Harvey (2003, p. 149) has used the term accumulation by dispossession (AbD) to refer to how neoliberal policies represent these new forms of accumulation. There are four main mechanisms of accumulation by dispossession: a) the privatisation and commodification of public services (health, education) and public goods (water, land, seeds, environmental protection and culture through the promotion of tourism); b) the deregulation of the financial sector and the subsequent legalisation of financial practices

¹³ Drawing on Duménil and Lévy (2001), the term 'finance' refers here not only to financial companies, but, more broadly, to those agents defending the interests of financial capital, whether these are capitalist owners or financial institutions.

¹⁴ Marx (1981, pp. 359-375) also has a detailed discussion on overaccumulation.

based upon speculation; c) the management and manipulation of crises based on the 'debt trap'; d) state redistribution of wealth from the poorest sectors of society to the private and financial sectors. This involves tax reforms and the socialisation of debt, where taxpayers pay the losses creditors may have, unlike in liberal periods of capitalist development (Harvey, 2004, 2005, pp. 159-165).

While neoliberalisation reforms were implemented in the UK and in the US, accumulation by dispossession has a marked imperialist character. By imperialism I mean here the imposition, within the dominated countries, of a government prone to the development of economic relations favourable to the interest of dominating countries¹⁵ (Duménil and Lévy, 2004, p. 660).

Harvey (2004) situates this imperialist character in the fact that dominating countries have historically responded to overaccumulation through spatial fixes, that is, through spatial displacements involving the opening up of new markets for resources, labour and consumers, hence absorbing commodity capital surpluses. Thus, US imperialism (also European imperialism, but mainly US imperialism) was intensified following the economic crisis of the 1970s (Duménil and Lévy, 2004; Harvey, 2004).

While sharing common features with previous imperialist processes, imperialism in neoliberal times has a distinctive feature: accumulation by dispossession. This is why Harvey (2003, 2004, 2005) has referred to AbD as 'the new imperialism'. Through the creation of foreign debt, US and European commercial banks attempted to compensate the losses incurred in the 1968-1981 period, when foreign loans to low-income countries soared dramatically (only World Bank loans increased 13-fold)¹⁶ (George and Sabelli in Araghi, 2009, p. 132). Since 1980 the debt trap became the vehicle through which the World Bank and the International Monetary Fund (IMF) restructured most states in the global South along neoliberal lines. From then on indebted countries' access to aid flows (and therefore debt service payments) from major donors became conditional on the implementation of neoliberal reforms through structural adjustment programmes led by the World Bank. All remnants of the state as a provider of public goods and services were to be eliminated. This led to the privatisation of parastatals and all sorts of public goods and services (Harvey, 2005, pp. 28-31).

The rescheduling and cancellation of Sub-Saharan Africa's rising debt, which increased from \$61 billion to \$206 billion between 1980 and 2000 (Bond, 2006, p.32), were used as a vehicle to implement more neoliberal reforms. This is exemplified by the World Bank-led Poverty Reduction Strategic Papers (PRSPs) and the Highly Indebted Poor Country (HIPC) initiative, where indebted countries access the cancellation of debt

¹⁵ These categories are dynamic as the emergence of BRICS countries suggest.

¹⁶ Ndikumana and Boyce (2011, pp. 30-37) show that since the end of the 1960s US and European commercial banks increased their lending to African countries despite knowing that many presidents in these countries were using money from 'development loans' to enrich themselves. The provision of loans became a common practice, partly because of the economic incentive for many politicians and also because World Bank officials earned commissions for providing loans to these countries.

under the condition of implementing more privatisations of public goods and services and by carrying out capital account liberalisation (Ruckert, 2006; Sumner, 2006). Thus, although the exaction of tribute is an old imperialist practice, during neoliberalisation debt management becomes for the first time a vehicle for legalising and institutionalising accumulation by dispossession (Harvey, 2004). In addition to these reforms, debt itself was a means of accumulation. For example, Sub-Saharan African countries had to repay 4.2 times the original debt in 1980 (Toussaint in Bond, 2006, p. 32). Another example of AbD is a series of IMF-led currency devaluations across the developing world during the 1990s that lowered production costs of capital, rising capitalist profits as a result (Gibbon, 1993; Ould Mey, 2003).

The World Trade Organisation (WTO) and the Uruguay Round in 1994 also played an important part in the neoliberalisation of the global South and in accumulation by dispossession. It did so by establishing the removal of import and export trade barriers as the main condition through which poor countries could access this new international trade regime (Raikes and Gibbon, 2000; Harvey, 2005, p. 100; Hurt, 2012). In addition, governments from rich capitalist countries and regions (former colonial powers including France and the UK and also the European Union, United States and Canada) further protected the interests of their private sector through bilateral *de facto* non-reciprocal free trade agreements, public-private partnerships with African countries and subsidisation policies (Nunn and Price, 2004; Stoneman and Thompson, 2007; McMichael, 2009; Carmody, 2011; Hurt, 2012).

These reforms and, more broadly, the neoliberal project, have been effective in substantially raising the profits made by foreign capital in the global South. The case of Sub-Saharan Africa is illustrative. Between 1970 and 2010 total capital flight coming from 33 Sub-Saharan African countries amounted to \$814.2 billion in constant 2010 dollars (and \$202.4 billion alone in the 2005-2010 period), which represents 84.3 per cent of Official Development Assistance and Foreign Direct Investment combined (Boyce and Ndikumana, 2012).

It is argued that multilateral and bilateral development agencies have also been active in the development of neoliberalisation in the global South, often promoting neoliberal solutions for 'better governance' and 'improved democracy' through the de-concentration of central government power. This has generally involved the promotion of private-public partnerships, the implementation of decentralisation reforms that devolve political power to local governments and local communities and the development of a civil society that is able to confront the state. In this imaginary of civil society, trade unions and labour movements are excluded. Thus, while popular mobilisation is repressed, advocacy becomes privatised, becoming a responsibility of NGOs and foreign donors (Harvey, 2005, pp. 176-180).

Multilateral and bilateral development agencies have also shaped NGOs' work, as the ability of NGOs to implement projects has become increasingly dependent on funding provided by these agencies. This has meant that, although much of these organisations'

work focuses on poverty reduction, they tend to avoid challenging the relations of exploitation that foster such poverty and hence the social relations of capitalist production. It is argued that in this context large NGOs have become increasingly elitist and disconnected from local realities (Shivji, 2007; Wallace, 2004).

These transformations are important given the considerable increase in the economic power of NGOs since the advent of neoliberalisation. The overall global flow of funding through NGOs is said to have soared from \$200 billion in 1970 to \$2,600 billion in 1997 (Wallace, 2004). This has gone hand in hand with the rapid proliferation of Northern NGOs in developing countries. In African countries the number, size and influence of NGOs is said to have grown dramatically in the 1980-1990 period (Gibbon, 1993).

Although in a different economic and political position than Northern NGOs, recent research also shows how this is also the case with African NGOs. These organisations are said to be submitting to Western donor interests while ensuring their members survive crises that most people in their countries are experiencing. African NGOs are hence considered as a new *comprador class* that acts as manager of foreign aid money (Hearn, 2007). This reveals how the neoliberalisation of African states and the subsequent expansion of foreign capital in African territories has widened this class, including now not only state actors, but also the so-called civil society.

2.3. Neoliberalisation and rural transformations in the global South

In order to contextualise the changes in workers' labour observed in the fieldwork area of this research, this section studies the relationship between rural transformations and the neoliberalisation of states in the global South. These changes concern not only working conditions, but also the type of economic activities performed by workers, the sphere of consumption, workers' relation to means of production such as land and the distribution of decision-making power at the local level.

While the ways reforms were implemented varied from country to country, there are some common features in the ways in which neoliberal restructuring of the state has impacted the rural world in the global South. These commonalities can be identified through four interrelated patterns of change: a) crisis in consumption-oriented agriculture and the fragmentation of labour; b) the development of export-oriented agro-food production; c) changing access to land and natural resources and d) delegitimisation processes and the perpetuation/emergence of local inequalities.

- Crisis in consumption-oriented agriculture and the fragmentation of labour

For countries with large portions of peasant population, such as African countries,

agriculture has been an important part of the neoliberal structuring of the state. These reforms have generally entailed a decline of state support to the vast majority of poor farmers through the elimination of agricultural parastatals, rises in the costs of basic goods and the privatisation and commodification of agricultural inputs such as seeds, fertilisers and water (Gibbon, 1993, pp.13-14; Araghi, 2009). Many have responded to these changes by fully abandoning farming activities, while others have only done so partially, reducing the time spent on farming while engaging in off-farm activities in and out of the village (Bryceson, 2002; Padrão Temudo and Bivar Abrantes, 2013).

While this process existed prior to neoliberalisation, it accelerated after the 1980s through rises in migrations to urban areas that blurred the rural-urban divide (Araghi, 1990). Those who migrate do it either permanently or temporarily (circular migration), within national boundaries as well as beyond them (Araghi, 1990; Sender, 2002; Cross, 2013; Guérin et al., 2014). Migrants who engage in wage-labour tend to perform semi-skilled and unskilled work in agricultural and non-agricultural sectors and tend to have casual contracts. Bonded migrant labour for the accumulation of capital has also become a common practice (Lerche, 2007; Guérin et al., 2012), although evidence of this type of labour is not prominent in Sub-Saharan African countries, where instead there are cases of payment reductions and wage-labour that is finally unpaid (Du Toit and Ally, 2003).

The lack of employment in urban areas that has been accentuated with neoliberal reforms means have led many migrants to work on their own account. For example, Gibbon (1993, pp. 14) suggests that the size of population involved in the informal economy in African countries both full-time and part-time basis increased at unprecedented rates after the implementation of structural adjustment programmes, creating a new informal market of cheap commodities.

Activities performed by poor women and men living in countries of the global South today generally differ. Women mainly do domestic wage-labour, agricultural work and home-based work (Guérin et al., 2014), while men tend to look for work in the construction sector and tend to do more transnational migration than women (Guérin et al., 2012; Cross, 2013). Income generated through off-farm activities and wage labour outside the village can, in some instances, reduce dependence of the rural poor over local dominant classes (Lerche, 1999) and help secure household subsistence needs (Sender, 2002). However, the literature converges that, in spite of diversification, these new activities are at best providing marginal economic gains for the rural poor. These characteristics are not exclusive of migrant labour. Working conditions of both the employed and the self-employed are generally poor, leading to deaths and illnesses in some instances (Bernstein, 2007; O’Laughlin, 2013).

The crisis in consumption-oriented agriculture has forced workers to fragment their labour in multiple and precarious economic activities in and out of agriculture. Drawing on Panitch and Leys (2001), Bernstein (2006, 2007) has used the term ‘classes of labour’ to refer to this fragmentation of labour in the neoliberal era:

‘Classes of labour’ comprise the growing numbers of producers...who now depend directly and indirectly - on the sale of their labour-power¹⁷...and who pursue their basic needs through insecure and oppressive wage employment and/or likewise a range of precarious small-scale farming and insecure "informal sector" ("survival") activity (Bernstein, 2006, p. 455).

- Trade liberalisation reforms and the rise of export-oriented production

Trade liberalisation reforms went hand in hand with an increase in the amount of export-oriented food produced in the global South and an increase in food (namely cereal) imports. A market of consumers dependent on these imported goods was created through the decline of state support for consumption-oriented agriculture above discussed (Akram-Lodhi and Kay, 2010b; Gajigo and Saine, 2011; Padrão Temudo and Vibar Abrantes 2013). Thus, the neoliberal global trade regime has not only deepened the commodification of food production, it has also increased the commodification of food consumption. More broadly, at the political level, the neoliberal restructuring of food production in Sub-Saharan Africa has meant that decisions about trade and investment in rural landscapes of the continent and rural populations’ decisions on money expenditure have become increasingly connected to the global economic political arena, in particular to US and European capital (Bond, 2006; Harvey, 2004; Nunn and Price, 2004; Fontes and Garcia, 2014).

In the period between 1986 and 2007, which coincides with the implementation of neoliberal reforms in the global South, agricultural exports coming from developing countries almost doubled (World Bank in Akram-Lodhi and Kay, 2010b). Agricultural products being exported are largely oriented for commercial capital (including supermarkets) in Europe, which is increasingly determining what is to be produced, at what pace and in what conditions through multilateral and bilateral trade agreements (Akram-Lodhi, 2007; Akram-Lodhi and Kay, 2010b; Araghi, 2009;). In fact, in African countries agro-food exports (fruits, vegetables, fish, ornamental flowers) have overtaken exports by traditional plantation crops such as tobacco, cotton and groundnuts in recent years as a result of this shift (Gibbon, 2011).

The development of export-oriented capitalist farming is generally done through sub-contracting of national firms (McMichael, 2009; Gibbon, 2011), which presupposes the existence of indigenous capital. This means that the integration of the rural South in global value chains is not always generated through a binary relationship between foreign corporations and poor peasants who work for them. Rather, it involves the disaggregation of capital into different indigenous as well as foreign capitalists who unequally distribute among themselves the surplus value generated through exploitation

¹⁷ By dependency on the sale of labour-power Bernstein (2007) refers to the need of workers to exchange their labour for money, hence including wage-labour and commodity production activities where producers work on their own account.

of poor peasants' labour-power (Baglioni, 2015). In some cases poor peasants do not become wage-labourers, but sell their products to the exporting companies by working with their own means, in many cases becoming indebted. It should be noted that these processes of globalisation of production have not led to the disappearance of production for the home market (Akram-Lodhi and Kay, 2010a; McMichael, 2012).

- Changing access to land and natural resources

The literature is documenting a recent rush by capitalists to acquire or use vast areas of land, especially in African countries. In 2009 there were 45 million hectares of land under negotiation globally and 70 per cent of them were in Africa (World Bank in Hall, 2011; McMichael, 2012).

Financialisation in the United States and parts of Europe led to an unprecedented rise in investments in food and biofuel production and therefore large-scale land acquisitions led by the financial sector in many developing countries seen as relatively safe investments after the 2008 financial crisis. These investors are not only financial institutions such as hedge funds, but also conglomerates involved in productive capital such as US, British and Brazilian oil companies that have become increasingly financialised¹⁸ (Amanor, 2012; McMichael, 2012).

Recent large-scale land acquisitions are also influenced by the 'commodification of everything' characteristic of neoliberalisation, as Harvey (2005, p. 165) calls it. In Sub-Saharan Africa the mercantilisation of culture, environmental conservation and air pollution is evidenced by land acquisitions related to the proliferation of tourism-oriented protected areas (Corson, 2011; Kelly, 2011) and by land deals and land occupations through the implementation of forestry-related carbon sequestration projects (Benjaminsen and Bryceson, 2012; Beymer-Farris and Bassett, 2012; Carrere, 2009; Tienhaara, 2012). Finally, in addition to private capital coming from rich countries, capital coming from the so-called emerging countries, indigenous capital and NGOs are also behind the seizure of vast surfaces of land in the global South (Hall, 2011). Unfortunately there are no quantitative estimates of the share of each group of actors behind large-scale land acquisitions.

¹⁸ Given that accumulation is achieved more rapidly through accumulation by dispossession than through the extraction of surplus value in capitalist production, many private companies have increased their financialisation (Harvey, 2005; Lapavistas, 2009). For example, profits made by US corporations derived from manufacturing declined by almost 50 per cent between 1980 (when neoliberal reforms started) and 2004 while financial profits made by these corporations have increased at least 25 per cent in the same period (Ray Dalio in Harvey, 2011, p. 22).

- De-legitimisation discourses and the perpetuation/emergence of local inequalities

Part of the neoliberal project has been to de-legitimise central governments in the South through discourses that picture state control over public resources as a threat to democratisation (Ayers, 2006; Beckman, 1993). Thus, democratisation discourses have gone hand in hand with decentralisation reforms in a majority of countries in the global South. During the 1990s a wide range of African countries introduced decentralisation reforms that have provided legal authority to local governments to take decisions related to different issues, among others the management of natural resources (Sender, 2002; Ruckert, 2006). It is argued that decentralisation reforms have been more useful to the global and local elites than to rural people experiencing deprivation despite being promoted as an opportunity to improve the representation of the poor. They have hardly challenged existing top-down relations between the state and the citizens (Pallotti, 2008) and have often fuelled the power of local ruling classes, who often use development funds to expand their domination over working class villagers (Pattenden, 2011).

2.4. The case of neoliberalisation in Senegal

While neoliberalisation is a global phenomenon, the political history of the process and its implications on rural populations vary from country to country. After presenting general social and economic data of the country, this section discusses how neoliberalisation came about in Senegal, the ways in which it transformed the nature of the Senegalese state and the implications of these changes for the living conditions of rural people.

Senegal is a country of 13.5 million people located on the Western tip of the African Atlantic coast, in the semi-arid zone of West Africa. Most of the Senegalese population is young, the average being 22.4 years old. The national language is Wolof, but there are six main ethnic groups including the Wolof, the Hal-Pulaar (an ethnic group located in other countries in West Africa), the Serere, the Diola, the Soninké and the Mandingo. 85 per cent of the population is muslim (of sufi majority) and 13 per cent is Christian. In general both religions coexist peacefully (DS in Dembele, 2003).

In the period between 2001 and 2011 the Senegalese economy grew annually at rates ranging between 6.7 per cent (for 2003) and 2.1 per cent (for 2009). However, more than half of the Senegalese population is poor. In 2011 it was estimated that almost 75 per cent of rural households were chronically poor, with only 18 per cent never experiencing poverty (CPRC, 2011). In Fatick, the region where fieldwork has been conducted for this research, 67.8 per cent of the population was estimated to be poor in 2010 (CRF, 2013). 55 per cent of the Senegalese population lives in rural areas today

where they lack access to basic services including running water, sanitation and healthcare.

The Senegalese economy is today dominated by the tertiary sector (trade and services), which contributes to 64.6 of the Gross Domestic Product (GDP) and employs 36 per cent of the working population (ILO, 2013, p. 14). While 49 per cent of the working population in the country is employed in the primary sector (including agriculture, fisheries and forestry), this sector only represents 16 per cent of the national GDP (ILO, 2013). However in 1974 only agriculture represented 35 per cent of Senegalese GDP (IRBD in Mackintosh, 1979, p. 20). As it will be shown below, since the mid 1970s onwards there has been an on-going crisis in the groundnut sector, an important source of income for most farmers in the country.

The informal economy is predominant, especially in the primary sector. Despite an increase of 3.9 in literacy rates for this population since 2001, in 2011 more than half of the working Senegalese population (15-year-old or more) was illiterate (56.8 per cent) (ILO, 2013, p. 17). Incomes in the formal sector are low. In 2013 the minimum wage in Senegal was 209.10 CFA francs¹⁹ per hour (0.31 euros²⁰) and 182.9 CFA per hour (0.28 euros) in the case of agriculture (ILO, 2013, p. 17). These amounts are more than ten times inferior to the minimum wages in Western Europe, making Senegal a country with vast reserves of cheap labour for owners of (namely foreign) private companies.

This disparity between salaries in Senegal and those in Europe can be better understood in relation to the process of accumulation by dispossession in Senegal developed through neoliberal reforms and to a historical political background of foreign dominance in the country's economic affairs. Senegal was the first French colony in West Africa and it became formally independent in 1960 but this did not mean *de facto* independence from its former coloniser. Senegal's first president Léopold Sédar Senghor challenged little foreign (mostly French and to some extent Lebanese) economic interests in the country. Prime minister Mamadou Dia's initiatives to nationalise the main sector of the Senegalese economy, the groundnut sector, were repressed, leading to the presidentialisation of Senegal's political system and the arrest of Dia. Thus, although there were some nationalisations in industry (in the oil processing and phosphate sectors), these were partial and income generated went to pay the costs of civil servants' wages (Diouf, 1992).

Senegal, as many other countries, was affected by rises in oil prices following the 1973 and 1979 crises. In addition, the groundnut sector had entered in crisis following a series of droughts from 1968 (Cruise O'Brien, 1979, p. 20). To face these problems the World Bank and the IMF encouraged the Senegalese government to start taking loans that would finance investment by foreign capital on large-scale agricultural projects that in practice were abandoned (Mackintosh, 1989). This meant that Senghor's 20-year-old

¹⁹ In the bulk of this thesis I will use CFA francs.

²⁰ CFA francs are converted to euros here given the fixed rate at which the CFA is pegged to the euro. 655 CFA equal 1 euro; 1000 CFA equal 1.5 euros.

mandate was one of increasing indebtedness (Cruise O'Brien, 1979, pp. 20-21).

It was in this context that World Bank/IMF-led neoliberal reforms started. The first of these reforms was a one-year stabilisation programme in 1979 that included a cap on state borrowing of CFA 99 billion (more than 151 million euros), restrictions in public spending and the liquidation of several parastatals. As none of the changes proposed were achieved, structural adjustment programmes started in 1980 as the condition for accessing more loans. This was also the start of the Socialist Party mandate led by a new president, Abdou Diouf (Diouf, 1992).

The 1980-1985 structural adjustment programme led to cuts in public spending of 40 per cent and the withdrawal of state subsidies for rice, sugar and cooking oil, all basic elements in food consumption, resulting in a rise of prices. The 1985-1992 structural adjustment programme created the new agricultural policy, which replaced farmer subsidies for seeds and fertilisers for the provision of credit. This led to a 400 per cent increase in the price of fertilisers (although at the time only 10 per cent of arable land in the country was using this kind of inputs), which were sold by the United States Aid International Agency (Dembele, 2003; Oya, 2006). The New Industrial Policy further privatised the industry sector and allowed labour regulations to be more flexible, hence making it easy to justify dismissals and the undermining of labour rights (Diouf, 1992). Neoliberal reforms only became stronger in the 1990s (Oya, 2006) and the government announced a plan to privatise at least 20 state-owned companies (Thioub et al., 1998).

Trade liberalisation was also an important part of structural adjustment programmes. Average trade tariffs declined by 22 per cent in the 1980-2000 period, all import quotas and licences were eliminated as well as export taxes and subsidies. In addition, prices were deregulated, among others those of staple foods such as rice (Dembele, 2003). In 1995 groundnut prices stopped being fixed by decree and became dependent on international prices (Oya, 2006) and in 1996 the national agency in charge of fixing groundnut prices was eliminated (Thioub et al., 1998).

It is in this context of declining state support for the rural population that the 1996 decentralisation code was approved, where local governments became in charge of key aspects of socio-economic development, including health, education, culture, sports, land as well as natural resource management. This transfer of responsibilities however did not go hand in hand with a rise in the budgets of local governments (Boutinot, 2001). It is argued that in this context, the number of local NGOs grew rapidly, local elites divided in old elites formed by wealthy individuals and new elites formed by intellectuals who compete for resources coming from development funds (Kaag, 2003).

The financial sector was also liberalised through the removal of controls for capital flight, liquidation of state-owned banks, which reinforce past ownership by foreigners of banks and financial institutions in Senegal (Dembele, 2003). To push liberalisation further, the IMF put pressure on countries in the CFA zone to devalue their currency and finally in 1994 the CFA Franc was devalued by 50 per cent leading to increases in

food and input prices of up to 30 per cent. After the devaluation, other public utilities were privatised, largely benefitting French capital (Creevey et al., 1995; Thioub et al., 1998). These privatisations included the water sector in 1995 and the electricity sector in 1999, which was acquired by a French-Canadian consortium (Dembele, 2003). Thus, in 2000 the Senegalese state only owned 5 per cent of the water sector, while 51 per cent was owned by a French company called Bouygues, 39 per cent by various Senegalese individuals and 5 per cent by workers at the Senegalese branch of Bouygues.

These changes reinforced French capital's already dominant position in Senegal. In 1992 it was estimated that 82 per cent of the main Senegalese companies (mines, energy, industry, banks, and agriculture) belonged to French private companies and French capital was also prevalent in banks and other financial institutions (Diouf, 1992). This is related to the pre and post-independence Cooperation Accords whereby French companies kept privileged access to raw materials in countries that used to be French colonies in Africa (Martin, 1995).

Not only devaluation, but also the country's debt trap with international financial institutions was a new pretext for the neoliberalisation of the state. In spite of 13 rescheduling arrangements since 1981, in 2002 Senegal's external debt accounted for 70 per cent of the country's GDP and for more than 200 per cent of its export revenues. In the period between 1967 and 2003 Senegal received 124 loans from the World Bank (although little is known about how much money has actually been disbursed) and 19 loans from the IMF since 1984. Thus, in order to access the cancellation of debt through the HIPC initiative, Senegalese president Abdoulaye Wade had to implement the PRSPs (Dembele, 2003).

The groundnut sector, the main cash crop used by farmers in Senegal, was central in the neoliberal reforms that followed the implementation of the PRSPs. The parastatal in charge of groundnut collection and transport called SONAGRAINES was privatised and substituted by a market-led system where private agents would collect the groundnut in 2002. It is estimated that that year farmers earned less than a third of what was actually produced because the government declined the price of purchase from farmers and because private agents speculated with groundnut prices (Dembele, 2003). In 2005 the national company in charge of groundnut processing and export SONACOS was also privatised and, since then, a French consortium called Advens owns it (Oya and Ba, 2013).

In addition to privatisations, donors' support for agriculture declined severely since the start of structural adjustment programmes. World Bank loans to agriculture went from 30 per cent of total funding in 1980 to a mere six per cent in 2006 and bilateral donors reduced agricultural loans from 19 per cent of overseas development assistance in 1980 to only three per cent in 2003 (Diagne in Koopman 2012). In addition to the deepening crisis of agriculture the living conditions of the majority of the Senegalese population have become more difficult due to increases in prices of basic products for household

consumption. Inflation rose from 2.3 per cent in 2002 to 6.0 per cent in 2007 and 2008 (OECD in Daffé 2013).

The decline of the groundnut sector has gone hand in hand with a further diversification of the national economy and a focus on export-oriented production. Part of the PRSPs in Senegal was the implementation of an Export Development and Promotion Strategy (STRADEX) in cooperation with the Canadian Development Agency aimed at expanding Senegal exports on five sectors, including horticulture, tourism, fisheries, textile and craft activities (WTO, 2003). At the start of this policy, horticulture was largely produced for the home market. Later on, exports (namely French beans, cherry tomatoes and mangoes) have grown significantly, especially between 1997 and 2005, especially after European supermarkets have started buying from Senegalese farmers (Baglioni, 2015; ONAPES in Maertens, 2009). This is in line with the global rise of commercial capital today above noted (Akram-Lodhi and Kay, 2010b). Similarly, the rise in fish exports is associated with an increasing demand from European companies (Niasse and Seck, 2011).

Most horticultural and fruit production for the home market and for export (mainly to the European Union) has concentrated in two zones of the country, the Niayes and the Senegal River Valley (Maertens, 2009; Diarra in Baglioni, 2015), neither of which includes the fieldwork area of this thesis. However, export-oriented horticultural production is likely to extend in the coming years as Senegal became part in 2012 of 'the New Alliance for Food Security and Nutrition', a project launched by Barack Obama at the G8 to invest in agricultural value chains and promote transnational and national companies in African countries (NAFSN, 2013).

As part of this shift towards export-oriented horticulture, land has also been put at the service of capital in recent years. Based upon various laws (1964, 1976 and 1996), Abdoulaye Wade's government, in power from 2000 until 2012, allowed local governments to give land concessions to private investors when the land is not being used (RdS, 2012). Faye et al. (2011) have estimated that between 2000 and 2012 large-scale land acquisitions account for more than 400,000 hectares, 60.9 per cent of them taken by Senegalese nationals who do not live in the local area and 38.1 per cent by foreigners.

The land uses behind these acquisitions include agricultural and biofuel production and tourism. The case of biofuel production in the Northern part of the country in the Fanaye area has been a well-known case, leaving four peasants dead who resisted giving their land to an Italian private company which operated under the framework of a food security initiative led by Wade's government called GOANA²¹ (Koopman, 2012). Fatick, the region where fieldwork for this research has been conducted, is one of the regions with less recorded large-scale land acquisitions (Faye et al., 2011). While not necessarily involving expropriations and not entailing a change in land ownership, it

²¹ GOANA stands in French for big offensive for nutrition and abundance.

should also be noted that since 1988 rural councils have been annually providing large-scale land concessions to hunting-related tourism businesses²² in various regions in Senegal. In Fatick 211,000 hectares are taken by these businesses every year during the hunting season (DEFCCS, 2012). The importance of hunting tourism is not exclusive of Senegal and it has been observed in other parts of Sub-Saharan Africa, where it has become a large and valuable industry generating about \$200 million a year, with half of that spent in South Africa (Brockington et al., 2008, p. 70).

Albeit in a different manner and for a different purpose, part of this trend of increasing acquisition of land by foreign actors in Senegal, is the development of forestry-related carbon markets in recent years. This is evidenced by the implementation of mangrove reforestation PES projects in Niomi and in other parts of the country through which vast areas of mangroves are being reforested and then preserved, leading to restrictions in access to resources (Bird, 2016). At the same time the government has started preparing for the implementation of the REDD+ programme (NDF, 2015).

2.5. Neoliberal conservation, neoliberal environments, neoliberal nature

Many have located the rise of nature-based tourism and forestry-related PES projects globally within the development of neoliberalisation and, particularly, within the neoliberalisation of environmental governance (Brockington and Scholfield, 2010; Büscher et al., 2012; Corson, 2011; Duffy, 2015; Heynen et al., 2007; McAfee and Shapiro, 2010; McCarthy and Prudham, 2004; Neves, 2010). Some scholars have used the terms ‘neoliberal conservation’ (Büscher et al., 2012) and ‘neoliberalisation of nature’ (Duffy, 2013) to describe the promotion of monetary incentives as the main vehicle for nature preservation.

Non-human nature is seen as one of the primary ways through which neoliberal capitalism is constituted, partly because the new mechanisms for nature preservation such as PES projects and nature-based tourism serve as a neoliberal ‘environmental fix’ through which the ecological contradictions of capitalist development are concealed (Büscher et al., 2012; Castree, 2008; Duffy, 2015). Büscher and colleagues (2012, p. 4) define ‘neoliberal conservation’ as a set of ‘ideologies and techniques informed by the premise that nature can only be “saved” through their submission to capital and its subsequent revaluation in capitalist terms’.

The neoliberalisation of conservation can be located within a broader process in which neoliberal solutions to environmental and climatic changes are promoted as inevitable (Castree and Felli, 2012; Heynen and Robbins, 2005) and where, in addition to nature preservation, environmental change and risk are being produced through the neoliberalisation of environmental governance (Castree, 2008; Heynen et al., 2007; McCarthy and Prudham, 2004).

²² Hunting tourism is considered as part of nature-based tourism (Brockington et al., 2008).

The neoliberalisation of environmental governance is said to be a context-specific process that varies according to political and cultural dynamics and to the material properties of the nature(s) subject to neoliberalisation (Bakker, 2007; Duffy, 2013; Loftus and March, 2015; Robertson, 2004). Nonetheless, scholars concur that its most common feature is the changing role of the state in environmental management in ways that enhance corporate authority over environmental action. In some cases this involves the full transfer of responsibility over some areas of environmental management to corporations and public-private partnerships through a process of de-regulation and re-regulation (Heynen et al., 2007; Robertson, 2004). In other cases, states keep their regulatory roles but work according to capitalist principles such as efficiency and profitability (Castree, 2008; McCarthy, 2004).

Scholars also agree that the neoliberalisation of environments has increased the role of conservation NGOs in the preservation of nature as well as their economic power. Since 1980 the number of conservation NGOs providing financial support to and getting involved in conservation initiatives in Sub-Saharan Africa has grown substantially. Some authors have noticed that in many cases these organisations are using conservation to promote their private economic interests (Brockington and Igoe, 2006; Corson, 2011; Brockington and Scholfield, 2010).

In addition to the growing power of corporations and NGOs in environmental management, the neoliberalisation of environmental governance, this process generally entails one or several of the following changes: a) the enclosure of environmental commons such as (forest) land, rivers, oceans, minerals and the atmosphere b) their subsequent *privatisation* (the establishment of private rights over these commons) and the privatisation of the conditions of production, for example, environmental quality as a result of the de-regulation of environmental health; c) *commercialisation* (i.e. the introduction of commercial principles and objectives in the management of nature); d) *commodification* (i.e. the creation of economic goods that can be sold through market exchange); e) the '*financialisation* of nature', a process that is evidenced by the expansion of finance in ecosystem management and by the creation of new financial products such as oil, weather and biodiversity derivatives (Bachram, 2004; Bakker, 2007; Labban, 2010; Loftus and March, 2015; McCarthy, 2004; McCarthy and Prudham, 2004; Pollard et al., 2008; Prudham, 2004; Sullivan, 2013). Several case studies already suggest how these measures have been questioned, stalled and turned to unexpectedly progressive ends as a result of popular collective mobilisation (Beymer-Farris and Bassett, 2012; Correia, 2007).

2.6. Conclusion

This chapter has explored the global and national context of this research. The chapter has focused on neoliberalisation, a political project rooted in capital internal problems of overaccumulation and aimed at restoring the power of global economic elites. It has

shown that neoliberalisation involves the restructuring of the state along neoliberal lines under the leadership of international finance and trade institutions. Such restructuring is based upon the implementation of policies that allow accumulation practices termed by Harvey (2003) ‘accumulation by dispossession’ that involve the creation and management of foreign debt, currency devaluations, the privatisation and commodification of public goods and utilities and drastic reductions or eliminations of trade barriers.

As the review of neoliberalisation in the global South and in Senegal has illustrated, accumulation by dispossession creates the conditions for perpetuating inequalities and, more specifically, the existence of capitalist class relations and neo-colonial relations. It largely benefits foreign capital coming from wealthy countries and, in the Senegalese case, namely European capital. On the other hand, it has negative consequences on most people living in rural areas of the global South due to the declining support from the state to agricultural production, an increasing commodification of agricultural inputs, a rise in export-oriented agricultural production, the subsequent undermining of production for consumption and for the home market, rises in food prices, increased consumption of imported foods, large-scale land acquisitions by capital and severe restrictions in natural resources. They have adapted to neoliberalisation through a fragmentation of their sources of material reproduction, engaging in multiple poorly-rewarded economic activities that include farm as well as off-farm work, waged work and work on their own account. Only a minority composed generally of the rural dominant class is accumulating by associating with transnational capitalist classes integrating their production (through exploitation of labour-power) in global value chains and appropriating money from development funds that have increased due to the neoliberal development approach promoted since 2000 based upon decentralisation and self-help community-based initiatives.

After the next chapter, which discusses the research methodology, the data chapters (chapters 4-7) will illustrate the role of neoliberalisation and, more broadly, the social relations of capitalist production, in shaping the living and hence labour conditions of people living in Dioube and Boko.

3. Methodology

3.1. Introduction

This chapter presents the research strategy followed to explore the connection between workers' living conditions and the social relations of production in nature-based tourism and forestry-related PES projects in Boko and Dioube. This research is a case study of green economies through a focus on labour. It draws ontologically and epistemologically on Marx's work, where the social relations around the production of human needs are seen as the basis for the study of the conditions of labour and everyday life. The research has used a broad perspective of the social relations of production and therefore of labour that includes other economic spheres such as consumption, distribution, exchange (and hence circulation) as well as their connection with other social relations, cultural characteristics and ecosystem dynamics.

Given the importance of the social relations of capitalist production globally and in Senegal today, the conceptual framework of this thesis, presented in this chapter, introduces the concept of capital, distinguishing it from other types of commodity exchange that exist in capitalist societies. It also discusses how to study labour in capitalist societies. Then, it provides a brief discussion of the three ways in which the social relations of capitalist production shape the conditions of labour and, drawing on them, it presents the three research question and sub-questions of this thesis.

The chapter also discusses the research strategy used for primary data collection, which has been informed by the ontological and epistemological perspective as well as the conceptual framework of the thesis. It introduces the location of the fieldwork area and discusses the criteria for selecting it. In addition, it presents the various qualitative research techniques used to triangulate data and discusses my positionality, the ethical principles and procedure that I used to develop relations of trust with informants.

The chapter is organised as follows. The first section introduces the research method used to proceed with data collection. The second section introduces the ontological and epistemological basis of the research. The third section discusses the conceptual framework. The research question and research sub-questions of the thesis are then outlined. This is followed by a discussion of the research strategy used for primary data collection and analysis. The last section concludes.

3.2. Research method: a case study of green capitalist economies through a focus on labour

Yin (2014, pp.16-17) defines case study research as an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-world context,

especially when the boundaries between phenomenon and context may not be clearly evident. Case studies allow researchers to focus on a case while allowing them to contribute to broader knowledge about processes that take place elsewhere. Accordingly, all case studies need to have boundaries, which means primary data collection needs to have its limits (Yin, 2014, p. 17). In this research, these boundaries have been set up in two ways. First, geographically, by limiting the study to Boko and Dioube and, secondly, by focusing on two “sectors” of green capitalist economies: nature-based tourism and forestry-related PES. While the differences between individuals and the two villages studied have been appreciated, the intention of capturing them has not been to make of this research a comparative case study.

Case studies are therefore chosen when context is seen as an important part of understanding the phenomenon studied. Context is a fundamental part of case studies about capitalist development. As discussed in chapter two, although capital accumulation processes have spread globally, the ways in which capital accumulation processes shape life (ecological as well as climatic processes and the living conditions of human beings) depend on people’s as well as nature’s responses to them and therefore on context-specific social, cultural and ecological dynamics (Da Corta, 2008; Harvey, 2014).

While taking into account these context-specificities and setting geographical boundaries for primary data collection, this research links the processes analysed in Boko and Dioube to the global and national context discussed in chapter two. The choice of a case study as research method therefore allows this double research objective: to understand the relationship between capitalist development and the conditions of workers’ labour as a global phenomenon on the one hand, and to study this relation in concrete realities, as people experience and respond to it within a particular context, on the other.

Case study research is also beneficial to study the ways in which the social relations of capitalist production shape the conditions of labour because, by allowing the use of more than one research technique and the collection of quantitative as well as qualitative data, it allows researchers to investigate the complexities of the social processes through which workers’ everyday lives change as the conditions for capital accumulation are created and recreated (Da Corta, 2008). It is also argued that case studies benefit from the prior development of theoretical propositions to guide data collection and analysis (Yin, 2014, p.17). Following this, the analysis of the green economy in Niomi in this thesis is located within the literature on the social relations of capitalist production.

3.3. Ontology and epistemology

Material production as the point of departure

The ontology of this research is in line with Marx's view that, although in capitalist societies human beings appear to be independent from one another, human existence is inseparable from the social relations and processes through which humans organise to produce their needs (whatever they are profit, subsistence or any other need)²³. Marx termed this process 'material production':

'Individuals producing in society is, of course, the point of departure. The individual and isolated hunter and fisherman, with whom Smith and Ricardo begin, belongs among the unimaginative conceits of the eighteenth-century Robinsonades...in this society of free competition, the individual appears detached from the natural bonds etc. which in earlier historical periods make him the accessory of a definite and limited human conglomerate...[however²⁴], the more deeply we go back into history, the more does the individual, and hence also the producing individual, appear as dependent, as belonging to a greater whole...the human being is in the most literal sense a *Zoon politikon* [a political animal] not merely a gregarious animal, but an animal which can individuate itself only in the midst of society (Marx, 1973, p. 83).

There are two elements to highlight from this quote. Firstly, for Marx the ways in which individuals obtain their needs cannot be studied by looking at their ability to dispose of property (assets, land, labour) according to their own preferences (O'Laughlin, 2009, p. 199) and hence independently from the ecosystem and society in which they live. The study of the processes through which individuals access their needs is therefore inseparable from the study of the social and ecological relations around production. Secondly, Marx does not see material production as a structure imposed on humans, but rather as a *process* experienced in action (individuals producing in society), as a process where human beings interact with the universe (non-human nature and society) as they secure their needs (Marx, 1959, pp. 30-34). The social relations of (capitalist) production therefore need to be studied by paying attention to the ways in which human beings meet their needs. Equally workers' experiences of production in a given context (for example, the green economy) need to be understood in relation to the social relations of production in such context.

²³ When describing the use-value of a commodity, Marx (1967, p. 125) said that it 'satisfies human-needs of whatever kind. The nature of these needs, whether they arise from the stomach, or the imagination, makes no difference. Nor does it matter here how the thing satisfies man's need, whether directly as a means of subsistence, i.e. an object of consumption, or indirectly as a means of production'.

²⁴ Emphasis added.

Since labour is ‘the creator of use-values...an eternal natural necessity which mediates the metabolism between man²⁵ and nature, and therefore human life itself’ (Marx, 1967, p. 133), labour enables us to understand how needs are met in a given context. In other words, it is the basic element for the study of material production. Labour also informs us about the social relations of production in a given context because as workers²⁶ produce use-values and meet their needs in their everyday lives, they interact with the social and natural world. This means that labour needs to be integrated in the study of society and of the history of natural landscapes (Barca, 2014, 2015). Labour is therefore a useful analytical category for exploring how workers experience material production in a particular context, for example, nature-based tourism and forestry-related PES projects in rural Senegal.

The scope of production and labour

Since material production is seen here as the point of departure for the study of society and labour is used in this research as the main analytical category through which to apply this ontological and epistemological perspective, it is necessary to discuss the scope of labour and production as seen in this thesis.

Production (and therefore labour too) does not only refer to production of commodities by capitalists, but, more generally, production of use-values by workers. Production is not eternal, but rather epochal. Therefore and as chapter two suggests, it needs to be studied in context, within certain spatial and temporal boundaries (Marx, 1973, pp. 105-108). Another important aspect about the scope of production and labour is that, as Marx did, this research does not see production as a separate sphere from consumption, distribution and exchange. Production is the means for consumption and consumption is the aim of production. Production is at the same time consumption in that when individuals are producing what they need for their existence, they are consuming their own time and effort (labour) as well as natural resources obtained with human labour. More importantly, by being the basis for the accomplishment of production, (the conditions of) consumption also reproduce the social relations of production and hence individuals’ relations within a society (Marx, 1973, pp. 85-100).

Production is also connected to exchange in that the social relations of production shape the exchange between workers’ productive activities and the rewards from that labour. The study of production also involves investigating its relationship to distribution. That is, it involves exploring how the means of production, labour and the product of labour

²⁵ Marx used the noun ‘man’ to refer to human beings in general. This could be substituted for the more generic term ‘humans’.

²⁶ The use of ‘workers’ (rather than human beings) here is associated with the fact that such a category provides a basis to distinguish their role in the functioning of material production as well as their living conditions from non-workers’ role in production as well as from non-workers’ living conditions.

are distributed within society. For example, when means of production such as land and money are distributed unequally, labour and the product of labour can also be unequally distributed (Marx, 1973, pp. 85-100). Following this perspective, the conditions of workers' labour reflect not only the functioning of production in a given social context, but also that of consumption, distribution and exchange.

Looking at labour as the basis for the production of use-values means that labour is not a synonym of work for a capitalist owner or as characteristic of capitalist societies exclusively (Cleaver, 2002). Labour takes a wide range of forms (Lerche, 2007) and its existence dates back to the existence of human beings. Labour is also broader than the expenditure of human labour in the production of a use-value (i.e. broader than the activity of work²⁷) (Marx, 1967, p. 133). Labour can be analysed by studying the following aspects or conditions of labour: a) the work activity itself; b) the rewards workers obtain in exchange for spending their labour in the production of use-values; c) workers' ability to appropriate the product of their labour, d) the relationship of workers to the means of production (i.e. how they access the non-human nature and the instruments they need for their work); e) their relationship to the products of their labour (i.e. whether they are free to appropriate them, whether they belong to somebody else and therefore whether the social relations of production affect the type of economic activities that workers perform); f) workers' ability to defend the conditions of their labour (Marx, 1959, 1967). When exploring changes in workers' labour in the context of the development of nature-based tourism and forestry-related PES projects in Niomi, the thesis will explore these aspects.

Some critics have argued that Marx's view of labour is narrow in that, by looking at it as a metabolism between humans and non-human nature, he ignored domestic and care work. Moreover, it has been argued that, due to his focus on labour as an appropriation of non-human nature, he neglected care relations between humans and non-human beings (Haraway, 1985). Whether Marx included unpaid labour performed at the domestic sphere such as housework and care work, also known as reproduction, in his notion of labour and whether he had taken into consideration human-non human affective interactions in his view of social reality is out of the scope of this chapter²⁸. What is relevant here is that, as previous academic work drawing upon Marx's critique of political economy suggests (Gimenez, 2005; Gimenez and Vogel, 2005; Hartmann, 1976; Vogel, 1986), labour includes unpaid domestic and care work as well as care

²⁷ The view that labour is broader than work is evidenced by Marx's definition of the 'simple elements of the labour process are (1) purposeful activity, that is work itself, (2) the object on which that work is performed, and (3) the instruments of that work' (Marx, 1967, p. 284). Similarly, in the 1844 Manuscripts, he identified several aspects of labour, one of which was 'the act of producing' or work: a) the relationship of the worker to the object of his production; b) the act of producing; c) the relationship of the worker to the universe, that is to non-human nature and to society (Marx, 1959, pp. 30-32).

²⁸ Exploring chapter 15 of *Capital* volume 1 Weeks (2011) shows the various ways in which Marx recognised unpaid domestic and care work as labour.

work in the protection of nature. Thus, this research includes the reproductive sphere within the sphere of production and, more broadly, all those activities through which humans produce their needs (whatever these needs are). However, it is necessary to mention that while acknowledging the differences some scholars have made between material, immaterial and affective labour (Dowling et al., 2007; Lazzarato, 1996), this research will not attempt to classify workers' different activities in each of these groups since the use of labour as analytical category is a means of exploring workers' lives.

Finally, material production has cultural, political, ideological and ecological ramifications (Barca, 2014; Harriss-White and Heyer, 2010; Hornborg, 2013; O'Connor, 1998). In other words, production extends beyond the 'economic' sphere of production, consumption, distribution and exchange and shapes other aspects of human beings' lives such as gender relations (Vogel and Gimenez, 2005; O'Laughlin, 2009), racial difference (Baldwin, 2009), their interaction with the state (Harvey, 2005, 2014) and non-human nature (Barca, 2012, 2014).

3.4. Conceptual framework

This section provides a general introduction to the concept of capital, which, as shown in chapter two, has an important role in the functioning of material production globally, in Senegal and in the development of nature-based tourism and forestry-related PES projects. The section first discusses the concept of capital distinguishing it from other forms of commodity exchange. Secondly, it explores the relationship between capital and labour beyond capital's supposed essential features, including the existence of capitalist owners and workers producing commodities for them. Third, it provides a brief introduction to the ways in which the social relations of capitalist production shape the conditions of labour as they emerge, survive and are challenged.

Capital and its distinction from other types of commodity exchange

Usury, labour exploitation and the exchange of products of labour for money have a long history that predates the development of what Marx termed 'industrial capital', 'capitalist commodity production' or 'capital' (hereafter referred to as 'capital'). Marx identified the specificity of capital (a specific form of exploiting labour, of accumulating wealth and of exchanging commodities) by comparing it to other types of commodity exchange. Before discussing this difference it is however necessary to provide a definition of commodities as they are understood here²⁹.

²⁹ Key relevant and influential scholars in the social sciences such as Appadurai (1980) and Sen (1983) have discussed the concept of commodity, but none of these authors have related people's ability to consume and socio-economic inequalities to the social relations within commodity production and exchange processes. As a consequence and in contrast to Marx, they do not acknowledge the fact that in capitalist societies commodities are only produced by a sector of the population (i.e. the working class) because another sector lives and accumulates wealth from the value generated by those who need to work to make a living (i.e. non-workers or capitalists).

Commodities are use-values with exchange-values. That is, they are objects and services that satisfy human needs and they are exchangeable for money. Beyond this basic definition it is necessary to make three clarifications. First, to appropriate their useful qualities (their use-value) all commodities require the expenditure of human labour. For example, a tomato can only be of use to human stomachs if labour (time and effort) is spent on working the land, looking after the tomato plant and collecting the tomato. Second, the use-value of a commodity can only be realised as exchange-value, that is, if individual owners of commodities take them to the market. So commodities can only satisfy human needs commodities when they are sold (i.e. the means for commodity exchange is money). Third, the exchange-value of each commodity represents a portion of labour-time spent by workers in the production of a specific use-value (Marx, 1967, pp. 125-140).

Marx defined capital by distinguishing it from simple commodity exchange and merchant capital. In *simple commodity exchange* processes individuals sell commodities to make money to buy other commodities that enable them to consume what they need. For example, a villager earns money by working for a nature-based tourism business and then uses that money to buy rice. *Merchant capitalists* are individuals who buy commodities that they then resell for a higher price, hence making more money. *Capitalists* (i.e. industrial capitalists) are individuals who use money to buy means of production (raw materials, machines and labour-power) that will produce the commodities they will sell (Marx, 1967, pp. 247-257).

Simple commodity exchanges differ from capitalist commodity production processes in that they are not driven by the imperative of accumulation, that is, by the need to make a profit. The person exchanging commodities is only driven by his need to consume. Merchant capitalists as well as capitalists exchange commodities in order to make a profit. However, while merchants convert money into capital by speculating with the price of commodities, industrial capitalists ensure capital accumulation by controlling the production process. The consequence is that while a merchant may not always be able to convert money into capital (as he depends on the bargaining process in the market), industrial capitalists do not end the cycle until they have made sure that profit is made. To do so they avoid the risky bargaining process characteristic of merchant capital, ensuring profit through the valorisation of *surplus labour* (i.e. through the additional and therefore unpaid time and effort that producers invest in the production process beyond the time and effort they would need to secure their needs). In other words, to make profit they increase the length of the working day and labour productivity (i.e. more output produced in less time). By appropriating the commodities produced by workers capitalists are able to transform workers' surplus labour into *surplus value*, which enables capitalists to make a profit. A portion of the profit earned is in turn reinvested in a new capitalist cycle where more surplus value will be created through the transformation of money into capital (Marx, 1967, pp. 247-269).

Capitalist societies beyond capital's supposed essential features

As in all societies where material production is organised around relations of exploitation between workers and non-workers (also known as class relations) in those social contexts where capital is the main social relation shaping the functioning of material production (here referred to as *capitalist societies*), workers and non-workers have different needs and access them in different ways. The *capitalist class* does not only need to secure subsistence. To survive as class capitalists need to make profit and to do so they need to own money-capital, appropriate means of production and enjoy decision-making power in society in order to appropriate means of production and use workers' labour according to their needs. The capitalist class obtains its consumption and profit needs by appropriating a portion of the surplus value generated by workers, whereas the *working class* (i.e. workers) needs to work to make a living³⁰ (Gramsci, 1971; Marx, 1967, pp. 927-928; Marx and Engels, 1985).

The existence of these two classes should not be understood as a division of society into capitalist owners and commodity producers working for them. As capitalism develops capital splits into various sections of capital. The capitalist in charge of producing commodities is the functioning capitalist, the commercial capitalist is the one in charge of selling those commodities (for example, supermarkets) and interest-bearing capital is in charge of providing credit to the functioning capitalist (Marx, 1981)³¹. Similarly, labour takes multiple forms in capitalist societies, such as wage-labour for a capitalist owner, wage-labour that does not involve commodity production (as in the case of domestic wage-labourers), unpaid domestic and care work, bonded labour and commodity production where workers produce on their own account, also known as 'petty commodity production' (PCP) (Bernstein, 1989; Cousins, 2010; Gibbon and Neocosmos, 1985; Gibbon-Graham, 2008).

Given this multiplicity of forms of labour and capital, how can we understand the importance of the social relations of capitalist production within a given context? Firstly, as chapter two suggests, this involves mapping the history of the context studied. Secondly, we can understand the importance of the social relations of capitalist production by studying how people meet their needs. Thus, the expansion of the social relations of production in a particular context is evidenced through the *generalisation of commodity production* (Gibbon and Neocosmos, 1985; Marx, 1967, p. 733)³². As the

³⁰ This perspective means that this research includes within the same class workers with more income than others. It therefore includes the so-called middle class as part of the working class.

³¹ Chapter two shows this fragmentation of capital into various sections through the process of financialisation process and through large-scale land acquisitions driven by the expansion of commercial capital in the global South.

³² Marx located the origin of the generalisation of commodity production in workers' sale of their labour power: 'when social wealth becomes to an ever-increasing degree the property of those who are in a position to appropriate the unpaid labour of others over and over again. This result becomes inevitable from the moment that there is a free sale, by the worker himself, of labour-power as a commodity, but it is also only from then onwards that commodity production is generalised and becomes the typical form of production; it is only from then onwards that every product is produced for sale from the outset and all wealth produced goes through the sphere of circulation' (Marx, 1967, p. 733).

capitalist class comes to concentrate most of the means of production in society, commodities become fundamental in the functioning of material production. Since commodities have an exchange-value, money becomes a central aspect of people's lives. As a consequence, people become increasingly unable to secure subsistence outside commodity relations. For workers this means that their labour becomes a commodity and they need to earn money through work to survive (Dinerstein and Neary, 2002; Gibbon and Neocosmos, 1985; Lerche, 2007; Marx, 1967, pp. 777-779; Taylor, 2002).

Not all workers may be generating money to access their needs. For example, unemployed workers and people in a dependent position such as children, elderly people and those workers doing non-remunerated care and domestic work may access money through those other household members sharing their income with the rest of the household. In addition, many people in capitalist societies secure survival through begging, but still form part of the working class by having to work to make a living³³. The expansion of capital in society hence does not necessarily erase all relations of cooperation and solidarity (Gibson-Graham, 2006; Graeber, 2011, pp. 96-98; Kropotkin, 1987).

Of the various forms that labour takes in capitalist societies, PCP is said to have been historically common in rural areas of Sub-Saharan Africa and particularly in Senegal. The reason is that the expansion of capitalism in Senegal and Sub-Saharan Africa did not go hand in hand with the turning of people into wage-labourers and landless peasants, but instead involved tax obligations (Gibbon and Neocosmos, 1985; Klein, 1968). Neoliberalisation processes have also increased the amount of workers engaged in PCP in the global South (Bernstein, 2007).

Scholars prefer to use the term PCP rather than 'smallholder farmers' because the latter makes rural production appear as exclusively related to farm work, and mostly subsistence-oriented and does not illustrate the system in which rural production is embedded (Cousins, 2010). Therefore, it fails to capture the dynamics of rural accumulation, differentiation and exploitation that follow the expansion of the social relations of capitalist production in rural areas (Bernstein, 2010, pp. 103-104; Cousins, 2010).

The formation of the social relations of capitalist production in concrete realities

Taking into consideration the above ontological and epistemological perspective above discussed, this research investigates the green economy in Niomi and, more specifically, workers' encounters with the green economy through a focus on material production. This means that it focuses on the ways in which workers, as they meet their needs,

³³ Begging is seen here as a form of work.

encounter the processes through which non-workers meet their needs, including land for their businesses and PES projects, labour to produce the goods, services and emission reductions that nature-based tourism businesses and PES projects provide, and a social and institutional environment that allow them develop their class interests through the green economy.

Accordingly, this research studies three interrelated dimensions through which the social relations of capitalist production are formed, shaping the conditions of workers' labour in the process: a) the expropriation of workers as a result of capitalists' appropriation of the means of production; b) the activity of work and the appropriation of value; c) capitalists' resistance to workers' disagreement with exploitation and expropriation.

- Expropriations and primitive accumulation

Scholars situate the history of the capitalist mode of production in the various privatisations through which non-workers' private property was created, also known as *enclosures* or *expropriations*. Enclosures enabled the expropriators to become non-workers, because through them the expropriated became reliant on the means of production that non-workers had appropriated or were forced to produce for non-workers (as the history of slavery shows) (Marx, 1967, pp. 873-941). Marx (1967, p. 874) called this process *primitive accumulation*, defining it as the separation of workers from the ownership of the conditions of their labour.

Primitive accumulation does not only express the pre-history of capital, but also its survival as a mode of production and, therefore it is a process that continues today not only through the appropriation by capitalists of means of production for commodity production processes, but also through the accumulation by dispossession mechanisms discussed in chapter two. Enclosures ensure the continuous creation of a reserve army of labour, that is, a sector of the working class population dependent on selling their labour-power to subsist (Akram-Lodhi, 2007; Ayelazuno, 2011; De Angelis, 2001, 2004; Hall, 2013; Harvey, 2003, 2004; Marx, 1967, pp. 867-904; Sanyal, 2007).

Enclosures may include land and natural resource privatisations, as is the case of the creation of tourism-oriented protected areas and forestry-related carbon projects (Corson, 2011; Kelly, 2011; Ojeda, 2012; Tienhaara, 2012). However, they may also involve the privatisation of public services, urban spaces and knowledge (Harvey, 2003, 2004, 2005; De Angelis, 2004). This means that those workers experiencing expropriation through forest privatisation in the green economy may be or have been expropriated in other ways. What all enclosures have in common is that, through them, capitalists colonise new spheres of life and social relations, separating workers from the ownership of their labour and creating new conditions of production to which workers need to adapt (De Angelis, 2001, 2004). Therefore, workers' experiences of and

responses to primitive accumulation can be studied by mapping changes in their ownership of the conditions of their labour resulting from enclosures and from workers' adaptations to them.

- Working conditions and the appropriation of value

The activity of work refers here to 'the act of producing' (Marx, 1959, p. 30), that is, to 'a productive expenditure of human brains, muscles, nerves, hands etc.' (Marx, 1967, p. 134). Working conditions can be analysed by mapping workers' experiences of such productive expenditure, in particular by looking at the labour-time and effort spent on a particular labour service, at the regularity of work and at workers' experiences of the activities that such expenditure of the body entails (for example, the various activities that a hotel employee needs to do). The (monetary) rewards that workers receive in exchange for their work are also part of their working conditions.

Since there is a plethora of forms of labour in capitalist societies, studying the ways in which working conditions in nature-based tourism and in forestry-related PES projects relate to the social relations of production in green economies requires taking into consideration the specific purpose of the activity of work and of the social relation between employees and employer in each of these contexts. It is therefore necessary to explore whether nature-based tourism and forestry-related PES projects are aimed at capital accumulation or at other goal. This involves mapping whether and how employers are appropriating value (and hence profit) from workers in addition to the product of workers' labour.

The study of the relationship between working conditions and the social relations of production in green economies also involves taking into consideration the ways in which intermediaries such as managers shape working conditions (Böhm et al., 2008; Spicer and Böhm, 2007). Moreover, in the case of workers doing PCP, it is necessary to map the social relations within the PCP enterprise as well as the social relations around access to the means of production (Bernstein, 2010, pp. 102-106; Cousins, 2010).

- Workers' mobilisations and the avoidance of disagreement

As with all class relations, the social relations of capitalist production are not natural since human beings are born equal. Therefore, workers may not necessarily accept their material conditions and the ability of others to live through their labour. They may mobilise against a wide range of issues that affect their lives such as landlessness (i.e. expropriations in the past) (Moyo and Yeros, 2005), potential land expropriations (Velicu and Kaika, 2016), the exploitation of labour (Böhm et al., 2008; Thompson and Ackroyd, 1995), work-related health problems (Barca, 2014), unemployment (Dinerstein, 2014a, 2014b), environmental degradation (Velicu and Kaika, 2016), gender inequalities, racism and global warming (Goodman and Salleh, 2013).

In recent years scholars have argued that some workers' mobilisations emerge not only as a reaction to a particular policy or a particular problem, but from a profound *disagreement* with the way in which the political system is organised and functions (Böhm et al., 2010; Dinerstein and Ferrero, 2012; Dinerstein, 2014a, 2014b, 2015; Murgia and Selmi, 2012; Pickerill and Chatterton, 2006). Since workers' disagreement challenges the existence of class relations (Rancière, 1999; Rancière in Blechman et al., 2005), capitalists avoid disagreement in order to maintain their ability to appropriate non-human nature and benefit from workers' labour according to their profit needs.

Capitalists' ability to appropriate land and use workers' labour in conditions that allow them to make profit requires the cooperation of the state. Thus, scholars have already noted the central role of states in enclosures facilitating access to forest land for forestry-related PES projects and tourism-oriented protected area creation (Igoe et al., 2010; Tienhaara, 2012). This supportive role of the state means that, when mobilising, workers may face resistance to their disagreement not only through encounters with capitalists but also in relation to the state repressive apparatus (laws, courts, police and prisons) (Dinerstein, 2003; Harvey, 2014; Koopman, 2012; Wood, 1995).

In addition to the use of coercion, workers' disagreement may be avoided through the production of consent. In countries of the global South, development agencies and NGOs coming from wealthier countries contribute to the production of consent, by promoting the social relations of capitalist production through their discourses (Bond, 2006) and by failing to integrate critiques of capitalist development in their development initiatives (Shivji, 2007). Such has already been observed in the making of green capitalist economies (Benjaminsen and Bryceson, 2012; Beymer-Farris and Bassett, 2012; Brockington and Scholfield, 2010; Corson, 2010, 2011; Igoe et al., 2010; Tienhaara, 2012).

3.5. Research questions

Taking into consideration the above discussion, the research explores how the conditions of workers' labour are changing as the social relations of production in nature-based tourism and forestry-related PES projects emerge, survive and are challenged in Niomi through the following research sub-questions (RSQs):

- RSQ1: how have fishermen and mollusc collectors experienced and adapted to primitive accumulation through the privatisation of 1,800 hectares of mangrove forest following the creation of Bintang protected area³⁴? (Chapter five)

³⁴ Although Bintang protected area went hand in hand with the privatisation of 1,800 hectares of mangrove forest and 5,000 hectares of terrestrial forest, this research sub-question focuses only on the former due to the fact that after the privatisation of this forest villagers had to work in much less productive bolongs, whereas in the case of terrestrial forests villagers were already working in other forests equally productive as those protected.

- RSQ2: how have villagers' working conditions in the nature-based tourism sector and in forestry-related PES projects in Niomi been shaped by the social relations of production in these contexts? (Chapter six)
- RSQ3: how have workers' mobilisations against exploitation and expropriation in the green economy been shaped by the ways in which actors leading nature-based tourism and forestry-related PES projects have avoided disagreement in these contexts? (Chapter seven)

The three chapters exploring these research sub-questions are preceded by a chapter that discusses changes in the functioning of material production in Boko and Dioube in the 2003-2013 period as well as the emergence of the green economy in Niomi. The processes mapped in this chapter draw mainly on the above general considerations about capital and labour. Table 3.3. at the end of this chapter outlines the relationship between the conceptual framework, the issues explored in each of the four data chapters, the research sub-questions and the research techniques used for primary data collection.

3.6. Research strategy used for primary data collection and analysis

This section discusses the strategy followed to apply the ontological as well as epistemological perspective of this thesis and the research conceptual framework in the process of primary data collection and analysis.

Period of and geographical location for primary data collection

Primary data collection for this thesis was carried out during five months in the Emssirah district. It started at the beginning of November 2013 and was completed at the end of March 2014, when I started feeling that the point of data saturation was being reached. During the first two months of fieldwork three short breaks were taken outside the fieldwork area where I wrote up and reflected on the data that had been collected so far and re-designed the research according to the data collected. I divided my stay between the villages of Boko and Dioube, living two months in Boko and three months in Dioube, given its larger size. Some of the data used in this thesis were also collected during the month I lived in Gani in 2012, a small village located 100 metres from Dioube, and during the week I lived in Ndiama, the village where Atlantis' local partner was living at the time.

The two villages selected, Boko and Dioube, are located in the south of the Sine-Saloum Delta of Senegal, 240 kilometres (6 hours by car) from Dakar and 24 kilometres from the border with Gambia. Both villages are in a plain area and are located on the

shores of an affluent to the Saloum river that goes southwards to Missirah, a village located in front of the Atlantic Ocean. The climate is tropical and composed of a dry season (from July until the end of September) and a rainy season (October until the end of June). However, the length of each season varies depending on the year. During the rainy season precipitations can reach up to 222 mm/m². The warmest months are April, May and November, where temperatures may reach 40 degrees. The coldest months are winter months, especially December and January where temperatures go down to 16 degrees (Climate-Charts, 2016).

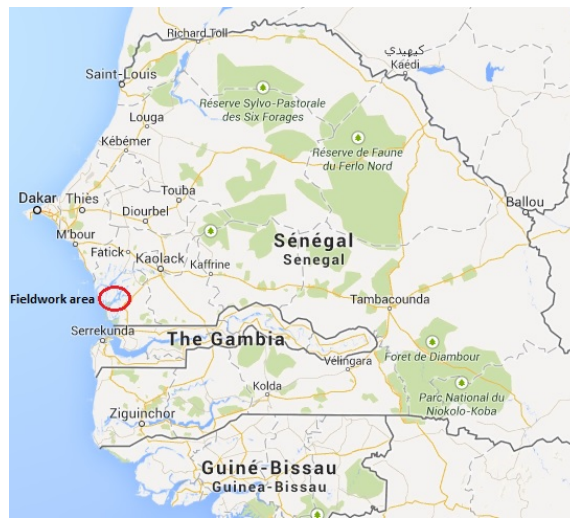


Image 3.1. Location of fieldwork area



Image 3.2. Location of Boko and Dioube

Boko is a small village of less than 100 people distributed in 16 households. It is located on an island and surrounded by mangrove channels to the east and by terrestrial forests

to the west. ‘Keur Bintang’, the campement located in Bintang protected area, and the 1800-hectare-long bolong today privatised (hereafter, Bintang bolong) are located two kilometres away from Boko to the northwest. During the tourist season, which lasts from November until May, Boko is visited by tourists everyday. Some of them stay in the campement in Bintang protected area, while others come from Dioube and from Emssirah. Emssirah is the village with the largest concentration of tourist accommodation. The coast of Boko has two picnic areas reserved for customers of the two main hotels in the area, both of which are located in Emssirah.

Dioube is larger than Boko and has around 566 inhabitants according to the local census distributed in 54 households (50 households in 2003). It is located next to three other villages and it is connected through a non-paved road that goes to the north toward Emssirah, where the local government and the road going to Dakar and nearby cities is, and Ndiama (located 500 metres north of Emssirah). There is a walking time of 35 minutes between Dioube and Emssirah and 10 minutes by motorbike. There are agricultural fields and a forest to the east of Dioube and, to the west, there is a bolong that goes to Boko. It takes around 10 minutes to cross it by motorised boat and around 30 minutes by non-motorised boat. To arrive at Emssirah from Boko takes 20 minutes by boat.



Image 3.3. Satellite picture of fieldwork area

Criteria for the selection of fieldwork area

Niomi is an example of a developing green economy in the rural South. In the area there is a large number of nature-based tourism businesses, most of which are located in

Emssirah and Ndiama, the village next to it. Moreover, these businesses have been growing in number recently in Boko and Dioube. The privatisation of the mangrove forest was also related to the development of the green economy in that it resulted from the creation of a tourism-oriented protected area. In addition, Niomi has been the site for the implementation of three mangrove reforestation PES projects in the 2009-2015 period.

My selection of Boko and Dioube as the site for primary data collection is related to the fact that in both villages, workers' relation to their labour has been changing in relation to the development of nature-based tourism and forestry-related PES projects. Both villages are home to mollusc collectors and fishermen. In both of them there are people who work or have worked in a nature-based tourism business and in the mangrove reforestation PES projects. The fieldwork period in 2012 noted that Boko and Dioube (together with its neighbouring village Gani) had been the focus of resistance against the closure of Bintang bolong. The idea of selecting two villages rather than one was not aimed at making a comparative case study of this research. However, it was decided that it would enrich the research to investigate the development of the green economy in two places with different histories, economic characteristics and where villagers' experiences of and responses to emerging green economies appeared different. These differences were noticed during the preliminary fieldwork phase (see table 3.1.).

Village	Villagers' reliance on the green economy (GE)	Resistance to expropriation and exploitation in the GE	Experiences of repression since the privatisation of Bintang bolong	Degree of connection to the institutions leading the GE
Dioube	Low. It does not receive tourist visits frequently. Participation in this economy increasing with mangrove reforestation carbon projects	High and overt. Conflicts with the NGO that created the protected area	Villagers sent to prison for fishing, and an employee at the protected area fired for protesting	Highly distant and disconnected for a long-time. Increasing connection/cooperation with the local government and NGOs.
Boko	High. The main tourist village in the area. Participation in carbon projects. Villagers rely on Atlantis' boat to go to Emssirah.	Less overt resistance	Villagers have been sent to prison for fishing.	The closest village to the campment in the protected area

Table 3.1. Observations about fieldwork area made in 2012

Given the small size of each village choosing two villages would enable a higher degree of comparison between households and individuals. Ndiama, the village I first visited in 2012 was discarded since it is the village where the local partner of Atlantis and, given his power in the local area, villagers would have less freedom to talk. Moreover, I did

not choose this Ndiama and Gani because few people in these villages had been working in nature-based tourism businesses and, unlike in Dioube, there were no nature-based tourism businesses.

Research techniques

Case studies rely upon multiple sources of evidence, with data needing to be triangulated (Yin, 2014, p. 17). Following this, different research techniques were used for the collection of primary data, including semi-structured interviews, participant as well as field observation and informal discussions.

- Household semi-structured interviews

Primary data collection started by getting a general overview of changes in the functioning of material production in both villages in the period studied (discussed in chapter four). This overview also provided a basis through which to explore the three research sub-questions of the thesis (see table 3.2.). A total of 70 semi-structured interviews were conducted with one or two household representatives in Dioube and Boko, 54 interviews in Dioube and 16 in Boko. After five pilot interviews (three in Dioube and two in Boko), these interviews were completed in seven weeks of fieldwork.

The interview started by asking villagers to talk about the economic activities the interviewee and other adults within the household engaged in between 2003 and 2013. They were also asked about other sources helping them secure their basic needs such as food aid, money borrowed from relatives, remittances, government pensions and credit. Moreover, they provided details about the means of production they used and about the social relations through which they accessed their means of production when they did not own them.

Villagers were also asked to provide details about the amount of hours worked per day, the speed at which they produced, the income made through their economic activities and changes in these conditions in the 2003-2013 period. In addition, interviewees were asked to describe their working day and, where relevant, the reasons behind changing their economic activities. Since Boko has been populated recently through migration, interviewees living in this village were also asked about the date of their arrival as well as the reasons that led them to come to this village.

As table 3.2. shows, these questions also helped map the social relations around which the economy (and therefore nature-based tourism and forestry-related PES projects) is organised in the two villages studied, the extent to which capital shapes the functioning

of material production, the influence of this green economy in promoting villagers' reliance on capital to secure material reproduction and villagers' class situations in the social relations of production. They also helped map producers' experiences of and responses to their class situation and particularly RSQ1 and RSQ2.

Aspect of the research to be covered	Question asked to the interviewee	Details to be explored in the interview and during the data analysis
<ul style="list-style-type: none"> • The character of the social relations of production in and out of the green economy • The role of capital in the functioning of material production in the two villages • The extent to which the green economy has increased villagers' reliance on capital to secure their needs • Villagers' class situations in the social relations of production 	<ul style="list-style-type: none"> • What were your economic activities in 2003 and in 2013 and those of other adults in your household? • How do you access your means of production both for 2003 and 2013? 	<ul style="list-style-type: none"> • What are the social relations they engage in their economic activities? • Are their economic activities oriented to the production of use-value or exchange-value? • Do they work or do they hire in labour? • Where do they sell their products? • How many days per year are they unemployed? • Do they become indebted to secure subsistence? • Is there a division of labour around domestic tasks? If so, who does what? • Villagers' reliance on wage labour, PCP and casual labour as well as number of unemployed villagers • Villagers' reliance on the bolong privatised before its closure and on work in nature-based tourism and PES projects? • Organisation of production in nature-based tourism and PES projects • Relations of production around means of production
<ul style="list-style-type: none"> • Working class villagers' experiences of and responses to their class situation, including expropriation and working conditions 	<ul style="list-style-type: none"> • What is your working day like? • How many hours do you and other adults in your household work? • How much have you and other household members earned for those economic activities? • What are the reasons for changes in your economic activities and working day? 	<ul style="list-style-type: none"> • The length and intensity of the working day for each of their economic activities, changes in these over time and reasons for those changes. • The income earned through their economic activities, changes in these and reasons for these changes. • Frequency of dismissals • Relationship between changes in the working day and the prohibition of natural resource extractive activities in Bintang protected area • Relationship between changes in their economic activities and primitive accumulation/the (capitalist) production process and processes of class formation in the green economy • Extent to which primitive accumulation and capitalist production processes have shaped mutual support between villagers

Table 3.2. Aspects of the research covered through household interviews

Because material production refers to individuals producing their existence in society and because the social relations of capitalist production can only be studied as they are formed, these interviews focused on changes in the conditions of villagers' labour in the 2003-2013 period³⁵. Since primary data collection started in November 2013 and ended in March 2014 some of the primary data included comes from observations in 2014. Although the comparison focused mainly on these two years, villagers were encouraged to talk about their personal stories at length, having the opportunity to discuss some of the changes they had experienced in the years between 2003 and 2013. Despite focusing on this period, in some cases interviewees talked about their economic activities in years prior to 2003.

Quantitative data generated through these questions may have not been accurate, especially given the 10-year timeline of the recall, but this phase of the research was only intended to provide indications of patterns of economic change in the two villages studied. Once these patterns were mapped, primary data collection focused on processes of class formation within the green economy through qualitative research techniques including interviews, participant and field observation. Additional aspects related to the broader context of material production in both villages such as the history of the settlements in both villages, the social relations of production and project and the functioning of material reproduction were mapped with other interviews and observation. During the first two months of fieldwork research I lived in Boko and Dioube and took several breaks to write up and reflect on the data collected. This enabled me to plan the following three months of fieldwork research where I lived permanently in both villages.

- Semi-structured interviews and informal discussions focused on nature-based tourism and forestry-related PES projects

While the household interviews were semi-structured and in some cases informants discussed in length their personal stories and had mapped some aspects of RSQ1 and RSQ2, additional semi-structured interviews were conducted to explore RSQ3 and to investigate in greater depth RSQ1 and RSQ2. Informants in these semi-structured interviews included villagers who had been working in PES projects and in the nature-based tourism sector, mollusc collectors as well as fishermen who used to work in the bolong privatised through the creation of Bintang protected area.

To map RSQ1 and RSQ2 I repeated many of the questions about expropriation and working conditions asked in the household interviews. However, given the more informal nature of these interviews, it was possible to understand villagers' experiences of and responses to the green economy in greater depth. To map RSQ3 interviewees

³⁵ Interviews started in the month of November, which meant that villagers could talk about their economic activities throughout the year 2013.

were asked about their collective reactions to the closure of the bolong and to their working conditions in nature-based tourism businesses and PES projects. They were also asked about their interactions with state institutions, NGO project officers and capitalist owners in these contexts. Interviews conducted in the preliminary fieldwork phase of 2012 helped map alliances between the capitalist class and state actors as well as other local intermediaries. In addition to these interviews, during the five months I lived in the villages I had informal conversations with villagers everyday, which improved my understanding of the processes studied.

- Open-ended questionnaires

60 short open-ended questionnaires were conducted in 2012 in the five villages closer to Bintang protected area that had at the same time participated in carbon projects, including Dioube, Boko, Gani, Bukarah and Marang (with a focus on the first three villages). Questionnaires were aimed at exploring the extent to which villagers had participated in decisions related to the green economy and to explore who, according to villagers, were the main beneficiaries and the most affected by the privatisation of the Bintang protected area.

- Participant and field observation

Participant observation enables researchers to learn about the activities of the people under study through observing and participating in those activities. Observation produces rigour when it is based upon the development of trust with the people in the social setting part of the study and when it is combined with other methods (Kawulich, 2005). It can be used to illuminate the discrepancies between what informants may have said in an interview or an informal discussion and what they actually do. It can be triangulated with other research techniques (Meyer, 2001).

In this research participant and field observations were aimed at understanding in more depth the processes of change mapped through the household and individual interviews and the open-ended questionnaires. Field observation was carried out throughout the whole fieldwork period. The content of these observations was registered through field notes at the end of every day. Participant observation had the specific purpose of studying villagers' experiences of their economic activities, especially the tasks and effort involved and included helping horticultural producers as well as mollusc collectors, accompanying fishermen when working and walking with hotel employees on their way to work. However, as meetings associated to issues around Bintang protected area that concerned villagers took place during my stay in Niomi, I also attended these meetings.

Main question and chapter	Main aspect investigated	Research techniques	Details to be explored	Concepts studied
What is the context in which the green economy emerges? (Chapter 4)	Social relations shaping the functioning of material production in and outside nature-based tourism and forestry-related PES projects	<ul style="list-style-type: none"> Household semi-structured interviews Participant observation Informal discussions Field observation 	<ul style="list-style-type: none"> History of both villages Social relations of production in and out of the green economy Class situations of villagers in material production Changes in the conditions of villagers' labour Villagers' relations with state institutions and other institutions Consumption patterns 	<ul style="list-style-type: none"> Material production Capital Exploitation Petty commodity production
Chapter five and RSQ1	Creation of capitalist property and the expropriation of workers	<ul style="list-style-type: none"> Household interviews Individual semi-structured interviews Informal discussions Participant observation Field observation 	<ul style="list-style-type: none"> Changes in time and effort spent on fishing and mollusc collection and in the rewards obtained from these activities Mollusc collectors' and fishermen's changes in producers' economic activities Reasons for their adaptive strategies 	<ul style="list-style-type: none"> Primitive accumulation Accumulation by dispossession Alienation
Chapter six and RSQ2	Working conditions and the social relations of production	<ul style="list-style-type: none"> Household interviews Individual semi-structured interviews Field observation 	<ul style="list-style-type: none"> Social organisation of production in nature-based tourism and PES projects Relationship between working conditions and the social relations of production Workers' experiences of and responses to their working conditions Production and reproduction of inequalities and class relations through exploitation 	<ul style="list-style-type: none"> Commodity Rent Value Labour-power Absolute and relative surplus value Wage-labour Petty commodity production
Chapter seven and RSQ3	Workers' collective struggles to emancipate themselves from exploitation and expropriation	<ul style="list-style-type: none"> Semi-structured interviews Open-ended questionnaires Participant observation Field observation 	<ul style="list-style-type: none"> Social organisation of production and relation to decision-making powers Workers' collective mobilisations against exploitation and expropriation Bonds between workers Social relations around which working class mobilisation is organised Class conflicts and conflicts between workers 	<ul style="list-style-type: none"> Working class mobilisation Class conflict Class formation Working class consciousness Primitive accumulation Working conditions

Table 3.3. Links between theory and research methodology

Access to information and research ethics

Access to the field is the process by which social researchers establish relations of trust with individuals who have been chosen as informants. It is hence not limited to having a green light from institutions or from being able to find informants willing to do an interview. As all relations, access is not gained once and for all and therefore requires being constantly aware of how one's own actions affect the extent to which the researcher is seen as a trustworthy person (Feldman et al., 2003). Thus, in spite of knowing the Senegalese reality after living in the country for 15 months and conducting research in the area for five weeks in 2012, building relations of trust with villagers was fundamental throughout the whole fieldwork period. To do so I took time not only to explain the purpose of my research in detail and make informants feel at ease within the interviews, but also to socialise with villagers during my daily life. I spent time with the young people, some of whom I became closer to.

Part of this strategy to establish direct relationships with villagers was my choice of living places during fieldwork. I avoided living in houses with members of the local government, with wealthy villagers, capitalist owners and villagers cooperating with them. For example, on my return to the area in 2013 I learnt that the fisherman from Gani who hosted me in 2012 was one of the main collaborators of the most powerful man in Dioube, who is a member of the local government and a gatekeeper for several projects. This, in addition to my wish to live in Dioube instead of in Gani in spite of the short distance between both of them, led me to abandon the house where I lived in 2012 and move to Dioube to a female headed household.

Given the patriarchal structure around which households are organised, I developed relationships with female informants by myself instead of doing so through a male intermediary. Part of this strategy was my choice to live in female-headed households, which enabled me to get better access to female informants in the village. In Dioube I lived in a household headed by a widow whose main economic activity is farming. In Boko I lived in the house owned by a divorced woman who works as a farmer and a mollusc collector and lives with her niece, who works as a cleaner in the small hotel in Bintang protected area. My knowledge of Wolof was also helpful in establishing relations of trust with women given that most adult women in both villages cannot speak French.

Another way I challenged divisions of labour as part of the access strategy of the research was to participate in household tasks such as fetching water, cooking and cleaning the house. Moreover, participant observation activities such as helping horticultural producers were also helpful in changing the way I was seen by villagers. Being conscious that I was not only an outsider, but also a white European woman and that Europeans living in and visiting the area such as tourists never do these kinds of daily tasks, getting involved in them was therefore an important part of the process of establishing closer relationships with them.

Ethical principles were considered and applied in all the research techniques. Prior to interviews I explained to all informants the purpose of the research. They were asked if they wished to participate in the research and oral consent was obtained from them. Respondents were not put at risk or in uncomfortable situations when interviewed. Rather than recording interviews notes were taken, which were kept confidential and in a safe place. As mentioned in chapter one, in order to protect informants, I have changed their names, the names of the institutions and businesses part of the green economy and the names of the locations where the research took place.

Data analysis

The research has sought to contribute to the broader literature by analysing the non-linear and complex processes through which workers' have experienced and responded to the formation of the social relations of production in nature-based tourism and forestry-related PES projects through their labour. Accordingly, the role of analysing the quantitative data (descriptive statistics) collected has been to find patterns of economic change while qualitative data analysis has been aimed at interpreting those patterns in relation to villagers' own experiences of and responses to changes in their labour. Rather than looking at definitive directions of change, the analysis focused on the process and non-linear, two-way interactions. For instance, fishermen's and mollusc collectors' experiences of and responses to the privatisation of the mangrove forest discussed in chapter five have not become a question of a transition from a pre-capitalist to a capitalist era. Similarly, the privatisation of the mangrove forest has been analysed in relation to a wide range of expropriations enabling capitalist development in the period studied.

The classification of quantitative data started during the short breaks I took in the fieldwork period, where I created a word file for each of the household interviews. After the completion of the fieldwork period, the information collected through the household interviews was classified in two excel tables, one for Boko and one for Dioube. Some of the information was coded in order to facilitate counting. Once the data was registered in these tables, I proceeded with the counting and created percentages. In order to process the qualitative data collected I did not use any software. Rather, the fieldwork notes where the interviews had been registered were the basis for this part of the data analysis.

Using the data in these excel tables and the fieldwork notes, I wrote a fieldwork data report divided in two parts. The first part discussed overall changes in the functioning of material production in Boko and Dioube and the second one focused on the green economy. The second part identified the three main aspects of the social relations of capitalist production here mapped. Although the first part mapped changes in workers' labour that were important to villagers but were not part of the green economy, I decided to keep this information within the thesis in a contextual chapter (chapter four).

This has allowed me to emphasise the broader importance of capital in the functioning of material production in both villages and in villagers' everyday lives. After a discussion with supervisors about the report I started writing the three data chapters focused on the green economy by taking as a basis the distinction between the three interrelated dimensions of the social relations of production in nature-based tourism and PES projects above discussed.

3.7. Conclusion

This chapter has presented the methodology followed in this research, which is based on an understanding of social reality where individuals do not produce their needs individually, but in society, and that consequently focuses on the social relations of production to understand social change and everyday life transformations. As a case study of workers' encounters with green economies, the research has focused on material production and labour to explore the research question of this thesis. The data generated in this research, which has been obtained through various research techniques and following ethical principles, has been analysed through a focus on the emergence and development of the social relations of capitalist production and their implications for changes in the conditions of workers' labour.

In order to provide a contextual background to the three papers addressing the research sub-question of this thesis, the next chapter introduces the two villages where primary data has been collected, an overview of changes in the functioning of material production within them and the PES projects and nature-based tourism businesses where villagers from Boko and Dioube have worked.

4. Material production in Dioube and Boko

4.1. Introduction

This chapter provides a contextual background to the following three data chapters. Its objective is to provide a broader picture of change, not exclusively related to the green economy by studying the functioning of material production in Boko and Dioube as well as changes in such functioning in the 2003-2013 period. The chapter illustrates a general trend towards the generalisation of commodity production in Boko and Dioube. Such trend has been indicated by a decrease in the number of non-commodified economic activities and by increases in the number of villagers engaged in wage-labour and PCP. The chapter illustrates a rise in inequalities between villagers, especially in Dioube where gatekeeping in development projects has become a means of accumulation for a minority of villagers. Finally, it also presents the nature-based tourism businesses as well as the forestry-related PES projects implemented in Niomi in the 2003-2013 period.

The chapter is organised as follows. The first section introduces the history of the settlement in each village. The second section discusses villagers' traditional economic activities and the social relations around which they were organised. The third section introduces the main changes in villagers' economic activities in the 2003-2013 period. The fourth section presents the main nature-based tourism businesses and projects developing in Niomi as well as the three mangrove reforestation projects implemented in this local area in the 2003-2013 period. This section focuses exclusively on those nature-based tourism businesses in the area where villagers have been working in the period studied.

4.2. History of the creation of Dioube and Boko

According to local oral history, the first inhabitants of Dioube were Serere people (i.e. an ethnic group) who came from Ngatine, an island in the Sine-Saloum Delta where they lived from fishing and mollusc collection activities. They abandoned Ngatine in order to escape from the French colonisers³⁶, who were taking people to work in the peanut fields. This led them to Diogay, another island close to the end of Bintang protected area. They stayed there for five years until 1867 when a manatee hunter called Dibali Diasi found continental land in the area where Dioube is located today. Diasi told the others who were in Diogay about it and then his brother Maga Diasi, a local leader,

³⁶ Definitive French colonisation in Senegal started in 1817 (Diouf, 1992).

told everyone they should migrate there as it was a safer place to hide from the French. They all arrived there and the village was founded.

In the following years Bora, the place located on the coast of Dioube that Dibali Diasi had found in 1867, became the point of entrance of other Serere coming from the islands next to Saloum river. This led to the foundation of other villages populated by Serere people nearby, such as Ndiama, Gani and Bukarah (see image 3.3.). Dioube and Gani are still linked and when the Ramadan ends people from both villages meet at the limit between both villages to pray together. The village next to Gani, Marang, is populated by Mandingo, who arrived before the Serere.

Since there were no inhabitants in the area where Dioube was founded, all families got land and still keep it (this is transferred via the father). The plots each family got were of great size (a minimum of 20 hectares). Although their economy was based on fishing and mollusc collection, they progressively became farmers. Today, the population of Dioube is still linked to the first settlers in the village, that is, to those arriving from Ngatine. All families except two descend from them and therefore, most families are Serere and own land with the exception of two. There have never been relations of exploitation around land access since land is lent for free (no cash or in-kind obligatory payments). Thus, until very recently all villagers were workers and only recently one villager has become a non-worker and people have started paying fees for land use in horticultural production.

Traditionally animists they also became muslims. Part of the reason was the fact that there was a Jihad at that moment and to protect themselves, converted to Islam. After Jihad leader Maba Diakhou Ba's death, islamisation was done in a more peaceful way through Maba's disciple Elhadj Omar Tall. As a result, the Diasi went to Gambia to learn the Quran and converted the rest of the village to Islam (interview with Abdoulaye Demba, 20 February 2014). Today, all families are muslim.

The island where Boko is located has been for many years a well-known place around the Sine-Saloum Delta for the productivity of Bintang bolong. Since the bolong that connects Boko and Dioube is less productive (according to villagers interviewed), Bintang was the closest bolong where people from Dioube and its neighbouring villages could capture large fish and easily find molluscs. The bolong attracted people from bigger villages in the delta (Joal, Mbour, Fimela, Missirah, Sokone, Bettenty, Djifer and Djirnda) who would come to fish and collect molluscs as well as wood from the mangroves.

The area next to Bintang bolong was not only the closest and most productive bolong in Niomi, it was also home to some of the people who live today in Boko and Dioube. Since the beginning of the 20th century there were families from Dioube, Marang and Djirnda (an island in the Sine-Saloum delta) living next to Bintang bolong. Settlements were formed around three areas next to this bolong: *Cucu*, inhabited by people from

Dioube; *Ngat Sambou*, by people from Marang and the area where the campement in Bintang protected area is located today, inhabited by people coming from Djirnda, an island in the Sine-Saloum delta. The coastline next to Bintang bolong was founded by a famous ‘fetish hunter’ called Yankouba Kamara who used to make his living by selling fetishes made of animal body parts. All those who wanted to settle in the area close to Bintang bolong had to ask permission of Kamara.

It was not until the 1950s that permanent human settlements were established in Boko. This happened after Gorgui Malang Kamara, Yankouba Kamara’s son, who used to spend the oyster collection season in Bintang, was chosen by a European woman to watch a cashew nut tree field of 10 hectares that she owned. The second permanent settler in Boko was a Malian Bambara man called Adama Touré who used to live in Gani. He established himself in Boko in the 1960s to help a European man who wanted to build a bridge that would connect Boko with the terrestrial land (this was never built). Malang and his family returned to Marang (see image 3.2.) after the construction of a non-paved road communicating this village and Emssirah. Given Malang’s absence in Boko in 2008, the president of the rural council decided to replace him by Aliou Touré as village chief, whose father Adama Touré had returned to live in Mali at that time. There is still one member of Malang’s family who is living in Boko.

Following these first settlers, a family coming from Djirnda who used to live next to Bintang bolong during the mollusc collection season decided to move to Boko in order to be closer to the market, that is, to Emssirah and Dioube, where women would buy their fish. Some of the villagers from Marang who were spending the mollusc collection season next to Bintang bolong also moved to Boko. Later on different people coming from Casamance arrived in the village. Rather than families they were individuals.

These settlers saw the island where Boko is located as a place to work. The main attraction was the forest: the mangrove and the terrestrial forests. Terrestrial forests are vast, they provided them with straw to make their houses and the various tree species in these forests enabled them to collect and make products from baobab, cashew nut and palm trees. The mangrove forests were highly productive, especially those privatised today through the creation of Bintang protected area. To all the good environmental conditions of Boko was added the fact that its insularity kept villagers far from their relatives, therefore allowing them to work more and save money (interview with Mamadou Ndong, 12 February, 2014).

The cultural background of the migrants coming to Boko was influential in their arrival because the island has a similar ecosystem to the areas where they come from, allowing them to practice their previous economic activities. Thus, palm wine and oil collectors, mollusc collectors, fishermen and farmers have been populating Boko since its foundation. In addition, many learned new economic activities from others living in the village. They have also used their imagination to engage in new activities that allow them to improve their economic situation, including handicraft making and carpentry.

The land was also fertile and therefore they could farm. However, unlike in Dioube, the new settlers did not get a piece of land on their arrival. In addition, they need to ask permission of the village chief to use the land. Once having permission, villagers can farm the land without paying any fees, but they are not allowed to plant trees.

The environmental characteristics of the area where Boko is located attracted people from different parts of the country and West Africa. The population of Boko is a mixture of people coming from different ethnic groups, including Bambara, Serere, Diola, Mandingo, Manjaku and Wolof, and areas in Senegal and in West Africa, including Mali and Guinea Bissau. Thus, Boko is the village with the highest concentration of ethnic diversity in the area since the other villages are organised by ethnic groups. Marang is populated by Mandingo people whereas Gani, Bukarah, Dioube and Ndiama are populated by Serere people. The majority of the people who settled in Boko are muslim, but there are six households with animist and catholic people (the Diola and the Manjaku).

4.3. Organisation of material production in Dioube and Boko

The organisation of material production at the household level in Dioube

In Dioube households are based on marriage. While all members contribute to the production of household needs, there are sexual divisions of labour within household economic activities that are gender-based and that reproduce age-based family hierarchies. For example, only women and girls perform domestic tasks and care work. Children have to obey the elder when asked to help in domestic and farm work. Some villagers told me that, when they were children, their grandfather would beat them if they refused to go to work in the fields (interview with Ansou Seidi, 15 February 2014).

Since household members cooperate to meet their needs, the amount of labour that each individual invests in his or her economic activities and domestic tasks would be influenced by the sex and age of household members. When farming was the basis for accessing cereals, families would ensure that there was enough labour for the work performed in the fields, and every married couple would have many children (interview with Sidi Kor, 8 March, 2014).

This relationship between the age and sex of household members and the amount of work done affects women in particular. The reason is that when their daughters migrate and when the children living in their household are young or are all male, they generally need to do the domestic work and care tasks (water collection, cooking, cleaning, looking after their young children and the elderly) on their own in addition to other economic activities such as horticultural production. Domestic tasks are particularly arduous because there is no electricity in Dioube and all families with the exception of one lack access to running water, meaning women need to collect drinkable and non-

drinkable water from the well. In addition, most families lack gas bottles to cook and rely on firewood. Gender inequalities are also visible in this sense since water and firewood collection is work exclusively done by women. This division of labour remains until present and seem to be fixed as I could observe during fieldwork. One woman from Dioube told me, ‘married women cannot leave the household and go to find work elsewhere because if we do not do the work at home, who will do it?’ (Interview with Fatou Diata, 3 March 2014). The morality introduced through Islam and through marriage rituals serves to perpetuate women’s oppressed condition. For example, rituals are celebrated when a Serere woman joins her husband’s household where they are told to be obedient to her husband and comply with the rules of her new household (Interview with Saly Mane, 14 November 2014).

With the exception of a foreign single man from Ivory Coast who lives on his own, all villagers from Dioube live in households where household heads are married men and women. Women keep joining their husbands’ household, but in many cases joint households are disintegrating. Living in joint households also affects negatively the conditions of women’s labour. For example, one woman in Dioube suggested that after she and her husband left her husband’s family joint household she had to do much less work. In order to help other women at the joint household, she had to do mollusc collection in addition to domestic tasks and work in the fields (Ndeye Lum, 12 December, 2014). Despite the progressive disintegration of households, brothers often work together in the fields.

With regards to money, men and women keep it separately, but men give their wives money to pay for food expenses, on average 500 CFA per day (0.76 euros). Women also spend the money they earn through their economic activities to buy children’s clothes, soap and other domestic products. Men have the obligation to pay for the costs of baptism and marriage ceremonies and for the dowry, which is either paid in-kind or ranges between 25,000 and 200,000 CFA (between 38.16 and 305,34 euros).

Outside the domestic sphere, traditional economic activities that are still practiced today include farming, fishing, mollusc collection and collection of non-timber forest products. In these activities villagers rarely use technologies such as boat engines, power generators for water irrigation systems and tractors. These activities vary depending on the season and are organised around sexual divisions of labour. In the rainy season men farm with their sons staple crops including millet, peanuts, corn and rice on the land owned by the household. In some families women also work in these activities. If not, they restrict their farming work in the rainy season to bean farming, which is less energy-consuming. In the dry season they do the post-harvest work, including grinding the millet, separating peanuts from the straw and putting them in bags (Ansou Diame, 9 March, 2014).

Most women grow and sell vegetables and some of them collect molluscs, including oysters, common cockles and bloody cockles (the collection season starts in January and

ends in May approximately). Oyster is the main species collected, given its abundance in the local area and its high price in the market. Oyster collection involves not only going to the sea and collecting oysters, but cooking them, taking the animal out of the shell and letting them dry in the sun. This takes between seven and ten hours of work every day approximately depending on how one organises it. Traditionally, during both seasons, but more often during the dry season, young and adult men would go fishing, which, together with peanut sale, used to be their main source of income. They would usually go to Bintang bolong, crossing by boat and, once back, many of them would go to Emssirah to sell the fish, spending approximately six hours in total.

Boko: material production beyond the nuclear household

Unlike Dioube, Boko is a combination of nuclear family households and a heterogeneous group composed of households formed by young as well as adult single men, divorced and single women who have settled in Boko or are circular immigrants (the latter are only a minority). Only eight of all the 16 households in the village have been founded through a marital relationship. Most households in Boko are formed by single young and adult men as well as by women who came to Boko after separating from their husbands. Unlike young and single adult men, the women who separated from their husbands do not live alone. One woman lives with her three sons (young men) and an adult man who comes from her village in Casamance and the other woman lives with her niece, a young woman. There used to be two more women who separated from their husbands. They used to live on their own.

As in Dioube, in households formed by a marital relationship men are those providing most of the money for food expenses but women also cover some of the expenses for household consumption needs. There are two households where husbands live in other villages in Niomi with their second wives but they are still the main contributors to the household economy and provide their wives in Boko with money for food expenses. In these male-headed households organised around marital relations the sexual divisions of labour are similar to those described in Dioube. In Boko there are no houses with running water and none of the households cook with gas and therefore domestic tasks are tough, as in Dioube.

In households that have not been formed through a marital relationship domestic divisions of labour are less fixed. Therefore, domestic tasks are less organised around relations of authority than in Dioube. Four of the seven single men who live on their own in Boko cook for themselves but there are three men who have their food cooked by women in other households. In exchange they contribute to some of the food expenses. Women prepare the food except when they are not there as in the mollusc collection season, when they are busy.

Material production in Boko has not been organised around class relations as all adult villagers work to secure their needs. As in the case of Dioube, most villagers from Boko do not use technologies in their economic activities (with the exception of a family with fishermen owning two motorised boats). Farming in the rainy season, largely consumption-oriented, continues to be an important activity and today there are 10 out of 16 households in Boko that farm. Unlike in Dioube where millet is the main subsistence crop grown, in Boko beans are the main subsistence crop (10 out of 16 households), but some also grow corn (three households), rice (two households) and millet (two households). The only cash crop farmed is peanuts and only three households grow them.

As in Dioube, women are only farming consumption-oriented crops, including beans and corn, that is, crops that are less costly in terms of effort and means of production (i.e. no need for a donkey or seed drill). Since settlements in Boko do not have a long history, some of the people living there keep farming in the villages where they come from. In 2013 six out of the nine households doing agriculture in the rainy season were also farming fields in the villages where they come from or where they have a second wife (four adult men in Boko have a second wife in another village).

Levels of adult education in Boko and Dioube

Literacy and knowledge of French are important aspects to consider when analysing workers' ability to participate in political spaces and, more broadly, in Senegal where local decision-making is often shaped by Europeans, either individuals working in development aid or in businesses, for example nature-based tourism businesses.

In Dioube gender inequalities are evident in education levels per sex, especially among adults in the 40-60 year old age range. All women in this age range cannot read and speak French since most of them went to Koranic schools. This is partly related to married women's ties to the household due to their domestic and care work obligations. On the other hand, at least one third of men in that age range are literate. There are three men from the village within that age range who hold a university degree, two of which are also rural councillors in Emssirah. The third man is also a politician and a pharmacist who lives in Kaolack and owns a campement in Dioube. A third of men living in Dioube have received a professional training (including electrician, carpenter, metal construction and sewing) and have a driving licence.

There are some signs that these gendered patterns are changing. In recent years the number of educated women in Dioube has increased and today both young women and men go to high school, which is located in Emssirah. In addition, in 2013 there was already a young woman studying English at the University in Dakar, though the number of men doing a university degree in 2013 was much larger at eight.

The number of literate adults in Boko is low. Unlike in Dioube, there are almost no literate adult men in the 40-60 age range, none of them has ever been part of the rural council and none has gone to the university. Only half of the men between 20 and 40 years old are literate. All young women with the exception of a young migrant from Casamance are illiterate. There are three young literate women who come from Boko, but they all live in Emssirah where they go to high school. All adult women in the 40-60 age range are illiterate with the exception of one woman who arrived in the village in 2006.

4.4. Towards the generalisation of exchange-value: changes in villagers' economic activities

This section provides an overview of the main changes in villagers' economic activities, which suggest that money has become an increasing dominating power in Dioube and Boko. The activities discussed in the following sub-sections do not include those related to the green economy, fishing and mollusc collection, as they will be discussed in the foregoing chapters. The relationship between these changes and capital accumulation processes will be discussed in chapter five within the context of the privatisation of the mangrove forest through the creation of Bintang protected area.

Overview of economic changes in Dioube and Boko

Tables 4.1. and 4.2. provide a quantitative comparison of adults' economic activities in 2003 and 2013 in Dioube (table 4.1.) and in Boko (table 4.2.). The second and third columns of these tables (titled "2003" and "2013") measure the number of adults performing each of the economic activities within each of these years. The last column in both tables compares the number of adults performing each of the listed economic activities for the years 2003 and 2013 by providing percentage change information. Although not all villagers who migrate provide remittances and hence do not contribute to the household economy, tables 4.1. and 4.2. provide information about the number of villagers engaged in wage-labour when migrating. This information has been included in order to map quantitative changes on villagers' reliance on money and wage-labour.

The tables show a trend towards the commodification of labour in both villages through an increase in the number of wage-labourers and people engaged in petty commodity production. This trend reflects some of the transformations that, according to several authors illustrate the expansion of the social relations of capitalist production in society, where production becomes: a) increasingly oriented for sale from the outset; b) less oriented for individual or household consumption (use-value) and more oriented for the whole society (production is increasingly oriented towards exchange-value); c) increasingly subject to the laws of capital competition and accumulation progressively integrated into international divisions of labour; d) increasingly individualised (it takes

place within individualised entities: individuals, household enterprises, enterprises, etc.) and e) increasingly private (productive assets (capital) are held largely as private property and unequally distributed) (Bernstein, 1989, 2004; Gibbon and Neocosmos, 1985; Lenin, 2008). The changes illustrated below are also in line with the changes experienced by rural workers in other areas of the global South through neoliberalisation that were discussed in chapter two.

		2003 n=132 adults	2013 n=152 adults	Percentage change
Fully consumption-oriented production	Millet, beans, rice and corn	105	105	0%
Production mostly oriented for sale	Fishing	10	3	70% decrease
	Mollusc collection	7	5	28.6% decrease
	Horticulture	36	52	44.4% increase
	Straw	2	9	350% increase
Petty commodity production (fully oriented for sale)	Homemade food	0	8	Increase
	Moto-taxi	0	7	Increase
	Other (skilled: electricians)	1	3	300% increase
Petty trade	Mango and other fruits	0	5	Increase
	Sugar and other products	0	3	Increase
	Shopkeeping	1	3	300% increase
Wage-labour	Permanent migration	25	20	20% decrease
	Village (tourism)	0	13	Increase
Hire of labour	Tourism	0	1	Increase
	Mango production	0	2	Increase
Gatekeeping	Horticulture	0	2	Increase
	Carbon projects	0	2	Increase

Table 4.1. General overview of changes in villagers' economic activities in Dioube

With regards to sectors, table 4.1. shows that farming (consumption-oriented agriculture followed from horticultural production) was the main sector in Dioube in 2013, although there has been a greater increase in the amount of straw collectors in the 2003-2013 period. Table 4.2. shows that tourism has become the main economic sector in Boko (wage-labour in nature-based tourism businesses and selling handicraft to tourists). Thus, whereas in 2003 there was only one man (the village chief) working for a nature-based tourism business, in 2013 there were 16 villagers working on a regular basis for nature-based tourism businesses. The tourism sector is followed by horticulture, which has experienced a substantial increase in the 2003-2013 period.

Nevertheless, collection of mangrove forest products (i.e. fishing and mollusc collection together) continues to be very important in the village despite the significant decrease in the number of villagers working in these sectors.

	Villagers' economic activities	2003 (n=33 adults)	2013 (n=38 adults)	Percentage change
Consumption-oriented	Beans, millet or rice	10	10	No change
Petty commodity production (fully oriented for sale)	Fishing	7	5	28.6% decrease
	Mollusc collection	18	13	27.8% decrease
	Collection of straw	3	13	Increase
	Collection of baobab fruit	0	4	Increase
	Horticulture	0	15	Increase
Wage-labour	Circular migration (fishing boat)	0	2	Increase
	Permanent migration	0	2	Increase
	Tourism	1	16	1600% increase
Petty trade	Handicraft for tourists	3	22	733.3% increase
	Shopkeeping	0	2	Increase

Table 4.2. General overview of changes in villagers' economic activities in Boko

Migration by villagers from Dioube

For many villagers from Dioube, men as well as women, migration, either in the long term or in the short term (circular migration) has been the exit to find new economic activities, given the poverty and lack of job opportunities in the area (in 2003 only one man was working as a wage-labourer in Emsirah).

- Long-term migration

Long-term migration has been and still is significant in Dioube. In 2003 there were 25 people from this village who had left the village to work elsewhere (i.e. 22 households with migrants, or 40.7 per cent of households in the village). With not much difference in 2013 there were 20 villagers who were living away from the village on a permanent basis (i.e. 14 households with migrants or 25.9 per cent of households in the village). Long-term migrants included married as well as single men and single women. The main destinations for permanent migrants looking for work include Dakar, Kaolack,

Gambia, Mauritania and European countries. All migrants were doing traditional economic activities in the village, including agriculture, horticulture, fishing, mollusc collection and none of them had a university degree or was a net hirer of labour-power (i.e. a non-worker) before their departure.

All women migrants have been doing domestic work and their salaries were very low, ranging between 20,000 CFA (30.5 euros) and 45,000 CFA (68.7 euros) per month. Men's economic activities performed when migrating include construction work, carpentry, factory work, loading and unloading merchandise at the harbour, security work, driving for a private owner or for privately-owned transport companies, generally owned by Senegalese. Three men from Dioube have also started working for the state as customs and military officers, but only one of them lived in the village at the time the research took place. Salaries for male wage-labourers are generally superior to those of women, between 40,000 CFA (60.1 euros) and 60,000 CFA (90.2 euros). The only exception is a man who works in a Spanish fishing boat and earns more than 75, 000 CFA, which is the amount he regularly sends to his family living in Dioube.

In the period studied there have been eighteen villagers (both men and women) who have come back to Dioube after leaving the village and in 2013 seven of them had gone back to farming in the rainy season and horticultural production.

- Circular migration

For men from Dioube circular (short-term) migration is also an alternative but less common than permanent migration. Circular migrants stay away from the village between one and three months and their destinations include Casamance, Gambia and different areas in the Sine-Saloum delta. Only six men from Dioube were migrating on a short-term basis in 2003. This number was the same in 2013. Three villagers migrated to do construction work and the other three were working in fishing boats during the dry season, most of them working in the traditional 'pirogues' in Senegal or Gambia or in big boats owned by Spanish companies.

The relations of production within pirogues are similar to those of sharecropping. The income from the fish collected is shared between the fishermen in the boat and the owner, who does not necessarily work and earns a portion of the revenues. This portion is different in each boat. In most cases the owner earns the same amount as three workers because he provides the net, the boat and the engine. In other cases the owner earns 60 per cent of the revenues while workers, between seven and ten men, share the other 40 per cent. Interviewees suggested that their daily pay ranges between 2500 and 5000 CFA (3.8 and 7.6 euros). Revenues are however uncertain and some days villagers return from the sea with nothing.

- Remittances

In 2013 there were 12 households in the village receiving remittances and nine of them were doing so on a regular basis. Some of them receive money from more than one household member (maximum four). Villagers sending money to their households in Dioube are doing different types of work and include three guards, a taxi driver, two factory workers who are hired on a permanent basis, two working for the state (one as an army officer and the other one as a customs officer), six villagers who are in Europe, two villagers hiring labour-power (a fisherman living in Mauritania and a pharmacist in Kaolack who owns a campement in Dioube) and a large-scale boat trader. The amounts sent range between 15,000 and 75,000 CFA (between 22.9 and 114.5 euros) per month, but in most cases they are not higher than 40,000 CFA. The villager sending 75,000 CFA regularly is the man who works in a fishing boat in Spain. Villagers who receive remittances generally invest them in buying food, concrete for the house and other materials such as tiles.

The rise of PCP in Dioube

Since villagers have become increasingly dependent on money and, since the remittances some of them receive are insufficient to improve their living conditions, they need to find money from other sources. As a consequence, petty commodity production has become increasingly important in the village.

This rise of petty commodity production in Dioube is evidenced by three main changes: a) engagement in new economic activities that involve the production of goods and services oriented for market production (including moto-taxi transport, sale of homemade food, jams and beds and electricity installations); b) commodification of goods that were only being produced for consumption (including mango, cashew nut and straw); c) output growth (and therefore increases in the labour invested in production too) of already commodified goods, in particular vegetable products.

These three changes do not mean that existing economic activities disappear, but rather, that the purpose and the conditions of production change. Individuals and households now combine petty commodity production activities with other economic activities (oriented for sale and for consumption) that they were already doing in 2003. Although diversification is often promoted as a solution for poverty reduction (Bryceson, 1990), the fact is that the generalisation of commodity production in Dioube means that overall villagers work more to meet their needs, as scholars have already noted (Dinerstein and Neary, 2002; Lenin, 2008).

Table 4.3. presents the details about the money invested in each of these PCP activities, the daily labour-time spent on them, the number of worked days per year and the approximate annual income generated through them. The differences in the income

villagers have earned through these activities is in line with the argument that there is a tendency towards differentiation between workers doing petty commodity production, which can lead to relations of exploitation between them (Bernstein, 2010). These differences also show how the activities performed by women are those providing workers with the lowest income.

Type of PCP activity	Costs of means of production and fees	Length of the working day	Approximate no. of worked days per year	Approximate annual income ³⁷
Moto-taxi (n=7)	400,000 CFA (in credit to pay for the motorbike)+ daily expenses for oil	12 hours	365	730,000 CFA (1114 euros)
		3 hours	Unknown	Unknown
Homemade food (n=8)	3000 CFA	5 hours	365	219,000 CFA (334.3 euros)
Straw collection (n=9)	0	5 hours	6-21	18,750-60,000 CFA (28.6-91.6 euros)
Horticulture (n=52)	3500-36,700 CFA	6 hours	365	109,300-142,500 CFA (166.9-217.6 euros)
Collection and sale of mangoes (n=5)	30,000 CFA-60,000 CFA in credit	2 hours and market sale	2	21,000-33,000 CFA (32.1-50.4 euros)
Mango production in owned land (n=6)	0 CFA	3 hours	10	120,000-1.5 million CFA (183.2-2290 euros)
Collection of cashew nuts (n=6)	0 CFA	3 hours	10	6000-120,000 CFA (9.2-183 euros)

Table 4.3. Comparison of villagers' PCP and petty trading activities in Dioube (for 2013)

- New petty commodity production activities

The rise of petty commodity production in Dioube is evidenced by villagers' engagement in new PCP activities, including moto-taxi transport and the sale of homemade food. Whereas the sale of homemade food was inexistent before 2003, now there are nine women in the village selling breakfast and dinner to other villagers. This activity provides women with up to 600 CFA (0.91 euros) for between three and six hours of work, but this income varies from woman to woman. All homemade food sellers have children and their husbands are either away or are returned migrants. Being a returned migrant is in most cases an indication of being impoverished through the experience of migration as well as indebted (two of these returned migrants are indebted to the shopkeeper as a result of the debts their relatives incurred while they were away).

Moto-taxi drivers are young men in the age range between 20 and 35 years old and they are generally single. They can earn up to 2000 CFA (3.05 euros) per day. This income is

³⁷ For space reasons only the average annual income is converted to euros.

the highest of all the PCP activities practiced in Dioube on a daily basis and substantially higher than the other PCP activities. However, moto-taxi drivers work six days a week and do long working days, staying the whole day away from the village as drivers are based in Emssirah, where there are more customers. Thus, their income per hour is low (167 CFA or 0.25 euros).

- Commodification of existing economic activities

The second way in which the rise of PCP materialises is through the commodification of formerly consumption-oriented activities, including straw collection, fruit farming (mangoes and cashew nuts) and horticultural production. Villagers' engagement in straw collection and sale is related to demand by hotels from Saly, a coastal area in Senegal where the main tourist complexes of the country are located. The straw will be used to make the roof of hotel rooms located in Saly. As table 4.1. illustrates, this demand is recent and has led to a 350% increase in the number of men doing straw collection in 2003-2013 period. Since 2004 lorries come once a year around April or May to buy the straw collected by villagers during the dry season, namely between November and February. They work between six and 21 days and earn between 18,750 and 60,000 CFA (between 28.6 and 91.6 euros). Young villagers like to do it because it allows them to earn income fast, which might be the reason why straw collection has become the most prominent PCP activity performed by men in a casual basis. This activity is also practiced by men living in villages nearby, including Boko, Marang, Gani and Bukarah.

Fruit farming in Dioube has largely increased but only due to a minority of families. In 2003 there were only two households selling mangoes in Dioube, one had at the time approximately nine trees and another had planted 500 trees but did not sell anything because the mango trees were still very small. However, after 2003 there have been six families who have planted both cashew nut and mango trees. In all cases, they are working class families and the household head is within the 40-50 year old range. In addition to these families there are also three other households that have a field with mango and cashew nut trees but the products are only for consumption. In 2013 two households from Boko were already earning income through mango production.

The commodification of fruit farming in Dioube has gone hand in hand with relations of exploitation between working class villagers. The families owning the mango trees have started charging other villagers (from Dioube and other villages) for selling and collecting the mangoes in those trees. The fee ranges between 2000 and 3000 CFA (between 3.1 and 4.6 euros) per washing bowl collected of large-size mangoes and a fee between 1000 and 2000 CFA (between 1.5 and 3.1 euros) for those with mangoes of smaller size (only one villager is doing small size mangoes). Owners are able to sell between 60 and 500 washing bowls of mangoes. This means that, for landowners, income generated through mango production ranges between 120,000 CFA and a maximum of 1.5 million CFA (between 183.2 and 2290 euros). However, given the area

recently planted by families these amounts are likely to be greater in the coming years when trees will start giving fruits.

While there is stratification within those selling mangoes, the main differentiation is between landowners and mango collectors, who are also villagers. In Dioube there are five women collecting mangoes in fields owned by other villagers from Dioube³⁸. They are all women with children of a dependent age and all have horticultural production as their main economic activity. Mango collection takes place after the harvest period and does not converge with work in the fields. Two of these women are the heads of the household since one is a widow and the other has her husband in prison since October 2013. Two of them are married to men who have no permanent work and the other is married to one of the men who planted trees in the period studied. In addition to paying the owner of the trees, mango collectors need to pay for transport costs. The bus ticket to Sokone, the nearest village with a large market, is 1000 CFA and 3000 CFA to Kaolack, the closest city. They also pay for transporting the mangoes (1000 CFA for 10 bowls) and sometimes a 1000 CFA fee to custom state officials (when going to Kaolack), totalling up to 7000 CFA (10.7 euros). Once the mangoes have been sold they pay back the landowner.

In the case of cashew nut collection in Dioube, it is the cashew nut trees owners who collect them. They usually sell either in the village or at the weekly market in Sokone. In the village they are sold either to the shopkeeper who sells them in Missirah where a German company is buying them. There is also a young villager who has associated with a Lebanese man to do petty trading on cashew nuts and in 2013 he bought bags of cashew nuts in the village that they then resold in Sokone. Like Missirah, Sokone is also a point of departure of export for cashew nuts. Each kilogram is sold at a minimum price of 300 CFA (0.45 euros) and a maximum of 500 CFA (0.76 euros) and they sell between 20 and 240 kilograms. Income generated through this activity ranges between 6,000 and 120,000 CFA (9.2 and 183.2 euros) as villagers sell between one and four bags of cashew nuts.

As in the case of straw, planting mango and cashew nut trees does not require any initial capital, only the will to plant the trees and to cut the straw in order to avoid fires is needed, as none of them hire labour-power to maintain the fields. However, now villagers are paying to fence their fields. Rather than buying a metal fence, which is too expensive for them (around 1 million CFA per hectare), they are paying a villager from Boko who makes fences from palm trees. It may be important to note that such increase in plantation is not only related to the monetary returns of production, it is also a strategy to protect their land against what they perceive as an increasing pressure for land acquisition in the area (interview with Fali Diasi, 24 November, 2013). This risk for land acquisition is particularly related to the 1996 law in Senegal through which rural councils are allowed to give land concessions if the land is not being used (RdS,

³⁸ Data for 2014.

2012). As chapter two shows, this law takes place in a broader context of neoliberalisation where the Senegalese state has increasingly become a tool for enabling the accumulation of capital.

- The case of horticultural production

Horticultural production deserves special attention because it is the main economic activity (i.e. the one taking most of their time and effort) for 52 individuals in the village, during the dry and the rainy seasons. Moreover, it has become especially prominent in the period studied. In Dioube women had always grown tomatoes, aubergines, bitter aubergines and cabbage, both for consumption and for market sale. They also started growing onions in 2003 when an agent from the national agricultural research institute taught them how to grow them.

Since 2009 there has been a rapid increase in the number of women doing horticultural production as well as in the output generated through this activity in relation to two projects implemented that year. The projects fenced 13 hectares and 9 hectares of land respectively, financed by an African multilateral institution (hereafter AMI) and in the other case by a European development agency (hereafter EDA). The fencing of the land enabled horticultural producers to protect their vegetables from cows who would either eat or destroy villagers' production. 39 out of the 52 horticultural producers in the village (75% of the total) have started working on land fenced by these projects. All of them are women with the exception of two single men owning plots there and three cases where husbands are helping their wives with irrigation.

For those who have moved to the fenced land, the conditions of their labour have changed. The amount of time spent in the field has now been reduced because now they do not need to spend the whole day in the fields to prevent cows from entering the field as they did before. In addition, they need to walk less to go back to the village from the fields because before their fields were located approximately two and half kilometres away from Dioube. This allows them to come back home for lunch every day. On the other hand, the intensity of their work has increased. Many of the interviewees have suggested that the number of plots they are working has increased by one or three and that they have started working faster. They also go more often to the market than previously, although they usually organise so that only a few women go to sell all the products of the women in the village. Moreover, the wells built for the project have made irrigation more tiring compared to the traditional method where people would farm next to the river and get water from there. While I was living there several women had back pain and related it to the irrigation work. In addition, those using the land in the project have started paying annual fees through which to save money in case the fence deteriorates³⁹ to those villagers representing the project.

³⁹ In the land fenced through the AMI project horticultural producers pay 2000 CFA for this purpose and in the land fenced through the EDA project producers pay 1000 CFA.

Kamara, the villager acting as gatekeeper for the horticultural project funded by the AMI, has used his position as project leader to extract rent from horticultural producers. Although the land that has been fenced through the project was provided for free by its owners (other villagers from Dioube) and although the gatekeeper is landless, he is charging horticultural producers a 2000 CFA (3.1 euros) annual fee for the use of the land. This fee increased to 2500 CFA (3.8 euros) in 2013. In addition, since that year the gatekeeper has started charging newcomers to the land an extra fee of 7500 CFA (11.5 euros) just for entering the land. In the interview I conducted with the gatekeeper he suggested that if improvements in the irrigation system were brought through new development projects, the land use fee could increase up to 50,000 CFA (80 euros) per year (interview with Aliou Kamara, 12 March 2014). Only two villagers can access the bank account where the money paid through these fees is being kept. One of them is Kamara (the gatekeeper) and the other is an old woman from Dioube who also works in the fields who, since she is illiterate, cannot keep control of the bank account. As a result of these fees, the money that villagers invest in horticultural production can be very high (see table 4.4.). Due to these costs and to the low prices of horticultural products, horticultural producers' daily income is particularly low, between 299 and 390 CFA (between 0.44 and 0.60 euros).

	Land fees	Seed costs	Fertilisers	Watering cans	Transport	Total capital needed
Minimum	0 CFA	500 CFA	0 CFA	3000 CFA	0 CFA	3500 CFA
Maximum	9500 CFA	13,000 CFA	4200 CFA	6000 CFA	4000 CFA	36,700 CFA

Table 4.4. Estimated investment needed for horticultural production

Through these two projects, consumption of fertilisers and seeds sold by European companies is also being promoted, with no information on the potential environmental costs of these products. It should also be noted that production in the AMI project is being supervised by project officers from a foreign development agency that is acting in partnership with an agricultural corporation that has already made contracts to buy horticultural products from other villages in the Emssirah district⁴⁰. When I left the field no contracts had developed in Dioube and it is unclear whether the company will buy from horticultural producers from Dioube.

Not all villagers agree with the above conditions and some have already refused to work there and two villagers who had plots in the AMI project abandoned them in spite of the protection that the fence offered to them. For example, one of the women who abandoned the project land said, 'if it is a development project, why do you need to pay 2000 CFA to get a plot and then 2000 CFA to have the fence?' (Demba Diallo, 15

⁴⁰ Administratively villages in Niomi belong to the Emssirah district (or *arrondissement*), which comprises 52 villages. There is a local government for these 52 villages.

February, 2014). Another woman said she abandoned the project land because getting water from the river is less tiring for her since she does not need to pump out water. Other villagers said that they did not like to work there not only because the effort was too much, but also because they felt the gatekeeper was getting a lot of money by charging so many people fees. Another villager said that she did not like it that ‘at the ‘barrage’ -as they call the AMI project land due to its proximity to a dam- they tell you what you need to farm’ (Interview with Mariama Thior, 20 November, 2014). Thus, horticultural producers working outside the project land grow other products as well such as green peppers, lettuce and turnips, which are not farmed in the land fenced through the AMI project.

In the EDA project horticultural producers only have to pay a 2000 CFA (3.2 euros) annual fee in case the fence needs to be repaired and therefore there are no land use fees. This difference with the land fenced through the AMI may be related to the fact that, unlike in the case of the AMI, the two women administering this space are also horticultural producers who work in that space. These two women are the president and treasurer of Mbela Gorum⁴¹, a women’s group created in 2003 through a reforestation development project implemented in Dioube in 2002⁴².

- Rental of means of production

The fees that are being charged to mango collectors and horticultural producers are part of a broader trend started around the mid 1990s whereby rental of means of production became a source of income for some villagers (Interview with Sidi Kor, 7 March, 2014). Means of production rented include boats, nets, seed drills and animals for farming including donkeys and cows. A seed drill costs 5000 CFA (7.60 euros) per rainy season, a net 250 CFA (0.38 euros), a boat 500 CFA (0.76 euros) and in other cases villagers do like a sharecropping system where the fisherman gives one part of the money earned to the boat owner and another to the net owner. Land for rainfed agriculture continues to be borrowed without any fees.

- Casual wage-labour and underemployment in the village

Today there is a great proportion of men who, while waiting to find short-term or permanent work in and outside the village, remain inactive more than half of the year.

⁴¹ In Serere Mbela Gorum means ‘my man gives me pleasure’.

⁴² The development project that led to the creation of Mbela Gorum was a joint project between a global conservation organisation and a bilateral development agency. It was implemented in 2003 and its objective was to reforest different tree species in the mangrove and terrestrial forest, including eucalyptus (for firewood and wood for construction), avicenia (mangrove forest) and sip-sip (a spiky plant used to fence the horticultural plots). The project led to the creation of Mbela Gorum, the women’s group managing the EDA project land today. This women’s group was considered as highly successful since women planted around 34,000 trees. They were the ones who invested most of their effort because they were mainly affected by cows entering the plots and because they need firewood for cooking (interview with Modou Somko, 13 February, 2014). Despite its reforestation component, this project is not considered a PES project since nobody was paid for the reforestation work.

By inactivity is meant here a lack of contribution to the material needs of the household. The other months that these villagers are not inactive they do straw collection, farming in the rainy season, production of watermelons right after the rainy season (in one case), preparing their field for mango and cashew nut production (in one case) and occasionally fishing. Only in the case of straw collection the product of workers' labour is sold to capitalist owners.

While being inactive, most of these villagers are waiting to find work in the construction sector or in fishing boats in other parts of the country and in Gambia. The construction work may last three days in some cases and in other cases two months while the work in the fishing boat may last three months. In recent years there are villagers who have started doing casual labour in the village since some villagers wanted to build a room or house. In 2013 there were 16 villagers in Dioube in this situation, which reflects the poverty in the village. Nine of them had children and all of them are married to women who are doing horticulture and therefore have little revenue.

- Hire of labour-power and sharecropping

Although the only non-worker living in Dioube is Kamara, more recently some working class villagers hire labour-power for rainfed agriculture and horticulture, although this is in the short-term. In 2013 there were four villagers doing this. There were two women who paid one day a group of women 4000 CFA to plant onions in her field. A man also paid 25,000 CFA to a group of young people who worked his two-hectare rice field. The other case is a young woman who hired a sharecropper (in Wolof called *surga*) during 2013 and part of 2014 to work in her field while she was working for a French NGO owned by the former co-leader of Atlantis. Revenues would be split between her and the sharecropper who, while doing the work, would only get a quarter of the income generated. As I was ending my fieldwork, this person left the field he was working. In all cases with the exception of the woman employing the *surga*, the hire of labour-power is short-term and for a specific purpose. That is, those hiring labour-power need to work to access their needs throughout the rest of the year. This is also the case of the owners of mango trees.

The generalisation of commodity production in Boko

In Boko money has also become increasingly important in villagers' everyday lives. In addition to wage-labour in nature-based tourism and PES projects, which will be discussed in chapter six, the growing importance of money in Boko is manifested by villagers' increasing engagement in new PCP activities, the creation of a credit group and an increase in the number of people who migrated to find income-generating activities.

- The rise of PCP

As in Dioube, villagers living in Boko have engaged in new PCP activities, including collection of non-timber forest products, horticultural production and production of jams for tourists. Young men from Boko have also engaged in straw collection in recent years but given that forests surrounding Boko are vaster, they spend more time in this activity than villagers from Dioube and earn more as a result. When collecting straw next to the village they earn approximately 20,000 CFA (30.5 euros) for two months of work (six days per week and two hours per day). When going to forests located further from the village they can earn up to 150,000 CFA (229 euros), but this activity involves a long, hard journey, probably harder than for men in Dioube. They wake up early around 5 or 6 am and walk around 6 kilometres and do not come back until 5 pm. When the forest has been burnt⁴³ they are able to walk more easily and faster (interview with Bayfall, 20 January 2014).

Another non-timber forest product collected by young men from Boko is *bouye* (the baobab fruit). In 2013 there were four men who collected *bouye* in Boko while in 2003 none of them were doing that. Every day they collect between half and one and half bags of *bouye*, each sold at 5000 or 6000 CFA (7.6 or 9.2 euros) to petty traders who come to Dioube and each year they collect up to twenty bags, earning up to 120,000 CFA (183.2 euros). Those men who work longer hours or who work more rapidly than others do one or one and half bags per day. *Bouye* collection is a risky activity as it often involves climbing baobab trees. It takes villagers around two or three weeks to collect the *bouye* they want.

More recently two other households have started planting trees and both are households with fishermen. A family planted 1.5 hectares of cashew nut trees⁴⁴, an area similar to the one planted by villagers from Dioube. The income earned by villagers from Boko through the collection of cashew nuts ranges between 120,000 and 300,000 CFA. Income generated through the sale of mangoes ranges between 12,500 and 120,000 CFA. Cashew nut collection provides greater income to villages from Boko whereas mango collection provides greater income to villagers owning trees from Dioube.

In addition to these activities, there has been an increase in the number of horticultural producers, associated with the construction of a well and the fencing of a small land surface financed by Atlantis in 2009. There are around eleven people working on this land. As in Dioube, most of the horticultural producers are women (nine of them).

⁴³ As it will be discussed in the next chapter, every year the forest surrounding Boko is burnt to allow customers from a hunting tourism business to see their preys.

⁴⁴ Although it was mentioned above that the village chief had prevented villagers from planting trees in the past it is not a generality as this case suggests. It should be taken into account that the couple that managed to plant these trees belongs to a Serere Niominka family formed by fishermen and mollusc collectors that has been living on the island where Boko is located longer than the existence of Boko as a village.

Unlike in Dioube, there is no administrator and villagers do not have to pay any fees for using the land or for potential fence repairs.

- Credit and reinvestment in PCP and petty trade

Reflective of the growing importance of money in material production in Boko is villagers' initiative to run a credit group. The group has been organised since 2010 and allows them to have every month a beneficiary of 27,500 CFA (42 euros). This is an informal credit group (with eleven villagers at the time the research took place) where each villager pays 2500 CFA (3.8 euros). The beneficiary is chosen arbitrarily. Interviewees suggested that they are using this money for buying means of production for their PCP and petty trade activities, namely seeds, watering cans and handicrafts, and in some cases to pay for consumption needs.

- Migration by people from Boko

Despite being a village populated by migrants, the few young men who were born in Boko have already migrated or attempted to migrate. Like young men from Dioube, they have done so in search of better economic opportunities outside the village. Some young men migrated to Casamance to work in boats transporting passengers. However, their income was uncertain and their working day was long. These conditions made them return to Boko and look for job opportunities in the tourism sector. A young man from the village took a boat with other men from Dioube to the Canary Islands in Spain. After this failed attempt he went back to Niomi and moved to Emssirah after having found work in a tourism company owned by his sisters' husband. The company organises fishing tours in the bolongs surrounding Emssirah and he now works as a tour guide. Another young man from Boko has also moved to Emssirah, where he works at one of the largest hotels there as a chef.

4.5. The rise of nature-based tourism and forestry-related PES projects in Niomi

- Nature-based tourism

Nature-based tourism businesses are much older in the area than PES projects, which only started in 2009. The development of nature-based tourism in Niomi dates back to one year after the inclusion of the Sine-Saloum delta in the list of UNESCO biosphere reserves (UNESCO, 2007), that is to 1981. The first nature-based tourism businesses were created under the initiative of European capitalists and were built in Emssirah. The first hotel, called 'Les Mangroves', was French-owned until 2013, when a Belgian

entrepreneur bought it. The second hotel, called 'Keur Guedj', was built in 1997 and its owner was also a French man who later sold the hotel to a Belgian. These two hotels have become the largest and most popular in Niomi and they are both protected by high walls, keeping their (mostly European) customers within an island of welfare surrounded by the poverty in Emssirah⁴⁵. They operate throughout the year and are the tourism businesses with the largest number of employees. They offer a combination of different types of nature-based tours, including fishing tours in the mangrove forest surrounding Boko and Dioube, hunting tours in the forests next to Boko as well as in other local forests, bird-watching, safari and cultural tours to villages, including Boko and Dioube and fishing competitions.

The development of nature-based tourism may either involve the implementation of conservation measures or may consist of nature-based tourism businesses using conserved nature as a tourism attraction (Büscher, 2013). Of all the nature-based tourism businesses in Niomi, only one belongs to the former kind. This is Bintang tourism-oriented protected area. The creation of this protected area went hand in hand with the construction of Keur Bintang, which has become one of the most popular in the area and has the third largest number of employees of all the tourism businesses here studied (a total of 24).

Since the creation of the protected area there has been a rapid growth in the number of campements in Boko and Dioube. These villages are located next to the mangrove forest, where various birds, fish and mollusc species coexist with humans. They are less crowded, clean, of small size and their houses have a traditionally African appearance as they are either made of straw or adobe. Villagers lend pieces of land to owners of tourism businesses in most cases at no cost, unlike in Emssirah where the prices people pay for using the land have become expensive in the last decade.

In 2007 a French travel multinational company led the construction of a campement in Dioube that is part of a circuit around the Sine-Saloum delta specialising in adventure tourism. The campement is located in the surroundings of Dioube, around 60 metres away from the village, close to the terrestrial forests located to the east of the village. It is built of concrete and it has six rooms and a small restaurant. The campement currently has one employee who only works when there are customers coming. The tour in Dioube is part of a 9-day trip for which tourists pay between 1135 and 1450 euros, flight costs and transport costs in the delta included. Depending on the tour chosen by customers, they may stay either two or four nights in Dioube. Tourists come with full board, which means they will not generate any additional income for villagers apart from that earned by wage-labourers. Thus, once in the village tourists do not need to pay for anything apart from drinks, which prevents villagers from selling other goods and services to these tourists.

⁴⁵ Images of these two hotels are available on their websites <http://keursaloum.com/ft/> and <http://www.paletuviers.com/en/Toubacouta/>

In 2009 a young French man who used to work in a well-known French tour operator initiated a similar type of business in Boko. This business, called ‘Bawa association’, offers a touristic circuit in three villages of the Sine-Saloum delta. Customers, who are namely white French people, pay 1065 euros for the itinerary, flight costs included. Bawa’s main customers are brought by a French organisation working on bird conservation. The organisation brings tourists who visit the forests surrounding Boko and film animal life there. The preservation of these forests is therefore a major interest for Bawa’s owner. This led him to bring several French film makers to Boko to make a short film about the fires in the zones used for hunting-related tourism by Keur Guedj with the idea of persuading national authorities of the need to end government land concessions to private actors for hunting-related purposes. This example suggests that capitalists in the nature-based tourism sector are not necessarily a cohesive group.

In the future Bawa’s owner plans to organise martial arts activities in the forests surrounding Boko for customers of his business (Interview with Pierre Denis, 15 February 2014). The tour in the Sine-Saloum Delta is a pilot project that the owner would like to replicate in other parts of the African continent, especially in former and current French colonies such as La Réunion where he has contacts (Interview with Pierre Denis, 15 February, 2014).

In addition to this business, in 2010 an Italian NGO implemented a project to enable villagers to earn money from tourism, which involved providing villagers from Boko with the means of production to sell goods and services to tourists who would consume locally-produced commodities (what the NGO called ‘responsible tourism’). To do so, the project financed a motorised boat to bring tourists to the island. The project also involved the creation of a market where villagers could sell handicrafts and the creation of a community restaurant.

Although most of the capitalists who own nature-based tourism businesses in Niomi are Europeans and non-locals, two men from Dioube who have become non-workers have also initiated their own tourism business. In 2012, one of them got legal documents for exploitation in a campement he owned since 1997. The campement, known as ‘Le Sine-Saloum’, was the first campement built in Dioube. Its owner is a villager from Dioube who lives in Kaolack, one of the largest cities in Senegal. The campement has around eight rooms and five employees in addition to the owners’ first wife who cooks for customers and workers, two of whom live at the campement because they are not from the village. As he is away, one of his employees is in charge of managing visits, but once a month approximately he visits Dioube.

Unlike the two large hotels in Emssirah above described, this hotel has few visits. The restaurant has no drinks or food available to customers unless they are certain that they will have a visit. Electricity works only with a generator since there is no electricity in Dioube. However, these conditions have been changing recently. While the construction of the campement started in 1997, it was not until 2012 that he started to invest more on

the campement because until then the owner lacked legal documents for this business. This investment has materialised in the construction of a pontoon at the entrance of the village, a room for employees and a swimming pool. The hotel has few customers and the owner used to work with losses but he continued the business ‘since he comes from the village’ (Lamine Diasi, 16 December, 2014).

In 2013, Kamara, who in addition to being the gatekeeper of the AMI project is the only non-worker living in Dioube, inaugurated his campement. The campement is located facing his house, on the coastline of Dioube, in front of the bolongs. The campement has six rooms. Since the campement has no legal documents yet, it is called ‘campement agro-écologique’ (agro-ecological campement). A young woman from Dioube is doing the cleaning and five women from Dioube go everyday to the campement to collect water from the wells that will be used for watering the plants in the campement. When customers come, Kamara’s wife does the cooking, often getting help from another woman in the village when the workload is too big in exchange for a wage. In addition, Kamara plans to find a security guard in the near future (interview with Kamara, 15 March 2014).

Since the owners of these last two businesses come from Dioube it is important to introduce their personal stories. They are the only two villagers of their generation who attended university. The owner of ‘Le Sine-Saloum’ studied pharmacy and owns several pharmacies in a nearby city called Kaolack, where he lives. Kamara went to the USSR to continue his studies as an agricultural engineer. When he returned in the 1990s he already had a large amount of savings that he unsuccessfully invested in real estate in Dakar. He was sent to prison for cheque fraud when he changed the amount that a farmer owed him from two to three millions CFA (from 3053 to 4580 euros). He was released from jail after a relative paid bail for him (Interview with Moussa Seidi, 8 March, 2014).

Both men were politicians before being owners of a nature-based tourism business. The villager who owns the oldest campement has been involved in political parties since 1981. He used to be part of the regional council and elected the rural councillors for Emssirah district in 2003. Similarly, Kamara has been the rural councillor in charge of coordinating development projects coming to the Emssirah arrondissement since 2009. Since his return to the village in 2003 he has been trying to acquire powerful positions within development projects at the village level and in the local area. In Boko there are no capitalist owners, but the village chief’s brother-in-law married a Belgian woman who owns a campement in Emssirah and he now lives there with her and helps her manage the campement. He also wants to create a small accommodation for customers of this business in his first wife’s house in Boko.

In 2013 there was also a campement under construction on the coastline located next to Boko. The seven hectares of land where it is located were acquired by a high-ranking Senegalese state officer, who then sold the property of this land to a Senegalese

entrepreneur and senior official of a multinational insurance company in 2013. Interviewees have suggested that there is pressure to develop businesses in Boko due to its insularity, beauty and the fact that landed property is becoming increasingly expensive in Emssirah due to the rapid growth of nature-based tourism there. They also suggested that the village chief from Boko wants to use his control of land in the village to commercialise the land for new tourism businesses. For example, the village chief's nephew, who was employed as gardener at the campement on the coastline of Boko, suggested that he had acquired several plots of land at the back of the village with the intention of selling them. The village chief however did not want to talk about this. This suggests that land rental and sale may become another means of tourism-related income generation for workers living in Boko in control of the land (i.e. the village chief's family).

- Mangrove reforestation PES projects

With regards to payment for ecosystem service projects, they all consist of reforestation campaigns where villagers are paid to collect and plant mangrove seeds. Although villagers had previously planted mangroves as part of development projects it was not until 2009, when a carbon offset project was implemented in the area, that they were paid to do so.

The first project implemented has been a pilot CDM project part of a global programme through which French companies are able to offset their emissions in former French colonies in West Africa. The beneficiary company was a French corporation that is offsetting some of the emissions derived from the production of plastic water bottles. The validation of this project by the United Nations Framework Convention on Climate Change (UNFCCC) has enabled the owners of the companies which are part of a global fund to develop more carbon offset projects like this one in other countries. The project was implemented by Atlantis and funded with public money through the same development agency that funded the EDA project and Bintang protected area. Atlantis' local partner Abdou, was the gatekeeper of this project.

The next PES mangrove reforestation project implemented in the area was also financed with public funding, in this case through a European government. The project is part of a programme that is taking place in 17 countries in Africa, Asia and Latin America. In Senegal the programme is coordinated by a European NGO called Global Mangroves and it is implemented in cooperation with local partners. In Niomi, the local partner of this PES project is Kamara, the villager from Dioube managing the land fenced by the AMI horticultural project who also owns the campement agro-écologique. The project took place in Niomi between 2011 and 2015 and consisted of five days of paid reforestation campaigns normally taking place in September where villagers from Dioube, Gani, Bukarah and Marang worked. In addition to the reforestation campaigns, the project sought to provide support for local livelihoods through activities designed by Kamara. According to an interview with a project officer, Global Mangroves wished to

acquire property rights over the carbon stored by the mangroves planted in the reforestation campaigns and sell these rights in the voluntary carbon market (Interview with Global Mangroves project officer, 7 July 2014) where there is less regulation but carbon credit prices are lower (UNFCCC, 2014). However, in a discussion with another officer from the NGO in 2016 he said that no credits had been generated through this project.

In 2013, soon after the Global Mangroves project started, the development agency that funded the carbon offset project implemented in 2009 led a very similar intervention to the Global Mangroves PES project. The gatekeeper for this project is a villager from Dioube. He is a worker but not a farmer. The project consisted of five or six days of paid reforestation campaigns that also took place in September. In addition, it also provided support for horticultural producers, but in this case the seeds and fertilisers were given for free to those women working in the EDA project. There is no information that the project had a carbon credit objective. Table 4.5. below, which only includes information for those nature-based tourism businesses and PES projects where villagers have worked in the 2003-2013 period, shows the faster increase in the development of the green economy in the area since 2003.

Year of land occupation	Nature-based tourism business and PES project name	Location of land occupied	No. of has
1985	Les Mangroves	Coast line next to Boko	1 ha
1994	Keur Guedj	Coast line next to Boko	1 ha
1997	Le Sine-Saloum	Dioube	1 ha
2003	Keur Bintang	Terrestrial forests surrounding Boko	5,000 has
		Bintang bolong	1,800 ha
2007	Campement owned by French tourism company	Dioube	1 ha
2009	Carbon offset project	Mangroves surrounding Dioube and Boko	Unknown (at least 200 has ⁴⁶)
2009	BAWA association	Boko	1 ha
2011	Global Mangroves PES project	Mangroves surrounding Dioube and Boko	113 has
2012	Campement agroecologique de Dioube	Dioube	1 ha
2013	Campement under construction (no name yet)	Coastline next to Boko	7 has

Table 4.5. Timeline of land occupation by the green economy in Niomi

In line with scholars highlighting the resonance of green capitalist economies with colonialism (Bachram, 2004), the table shows that the development of nature-based tourism and PES projects has involved a vast spatial (land) occupation by non-locals in Dioube, Boko and the surroundings of these villages. Although the two largest hotels in

⁴⁶ The other PES project funded by the same European development agency is not included because there was no information about the exact amount of hectares that were reforested.

the area are located in Emssirah, they have been included in this list because both hotels have a picnic area on the coastline next to Boko.

4.6. Conclusion

This chapter has discussed the functioning of material production in Dioube and Boko and changes in the 2003-2013 period by looking at transformations in villagers' economic activities. It has also introduced the nature-based tourism businesses and the forestry-related PES projects where villagers from Boko and Dioube have worked as well as the changing land patterns that have followed the development of this green economy. The chapter has shown the growing power of money in villagers' everyday lives. It has illustrated how villagers' growing reliance on money has gone hand in hand with a rise in PCP activities in both villages, some of them practiced on a daily basis and some practiced on a casual basis, with income differentiation, relations of exploitation and commercial relations between villagers. The chapter has also described the recent emergence of nature-based tourism and PES projects as well as the class trajectories of the two villagers from Dioube who own a campement.

The processes mapped here, from the foundation of Dioube and Boko to the development of the green economy, demonstrate that important changes have been taking place in the functioning of material production in this area. At the same time, the chapter has shown how women continue to be underprivileged since, in addition to doing the arduous domestic work, the income they earn through their PCP activities is low and comparatively lower than the PCP activities performed by men living in these villages.

The next chapter discusses how fishermen and mollusc collectors from Boko and Dioube have experienced and adapted to the closure of Bintang bolong by focusing on the conditions of their labour.

5. Experiencing primitive accumulation as alienation: mangrove forest privatisation, enclosures and the everyday adaptation of bodies to capital

5.1. Introduction

This chapter studies how fishermen and mollusc collectors from Boko and Dioube have experienced and adapted to the privatisation of 1,800 hectares of mangrove forest through the creation of Bintang tourism-oriented protected area. Large-scale land expropriations in rural areas have become common in recent years, generating a scholarly interest in this topic, known today as land/resource/green/blue grabbing (Borrás et al., 2011; Borrás and Franco, 2012; Fairhead et al., 2012; Benjaminsen and Bryceson, 2012). Acknowledgment that large-scale land expropriations are a vehicle for the accumulation of capital has led to the frequent use of the concepts ‘primitive accumulation’ and ‘accumulation by dispossession’ to explore the agrarian transformations that go hand in hand with these expropriations (Adnan 2013; Ayelazuno, 2011; Baird, 2011; Benjaminsen and Bryceson, 2012; Bush, 2009; Corson, 2011; Kelly, 2011; Levien, 2012).

Marx (1967, p. 874) used the term ‘primitive accumulation’ to refer to the social origins of class relations and the social relations of capitalist production. He defined it as a process through which workers are divorced from the ownership of the conditions of their labour. Primitive accumulation enables the creation of non-workers’ private property (i.e. non-workers’ ability to live from workers’ labour) and generates the conditions for the emergence of the social relations of capitalist production through enclosures that expropriate workers in various ways (Akram-Lodhi, 2007; Ayelazuno, 2011; De Angelis, 2001, 2004; Harvey, 2003, Marx, 1967, pp. 967-968).

Drawing on Luxemburg’s argument that primitive accumulation is an ongoing process, Harvey (2003; 2004; 2005, pp. 160-165) has used the term ‘accumulation by dispossession’ to describe a set of contemporary enclosures that are not (directly) part of capitalist production processes but that are essential for the survival of the capitalist mode of production⁴⁷. As discussed in chapter two, these mechanisms include: privatisations and commodifications; financialisation; management of debt and financial

⁴⁷ David Harvey sees accumulation by dispossession as part of primitive accumulation and arrives to this concept by citing Luxemburg’s argument that primitive accumulation is an ongoing process and he justifies his use of AbD as follows: ‘since it seems peculiar to call an ongoing process ‘primitive’ or ‘original’ I shall, in what follows, substitute these terms by the concept of ‘accumulation by dispossession’ (Harvey 2004, p. 74). While agreeing with Harvey on this, the term ‘primitive accumulation’ will be used in the bulk of this paper to refer to AbD in order to highlight the coexistence of enclosures that respond to overaccumulation crises with those that are part of capitalist commodity production processes.

crises; and state redistributions from the lower to the upper classes.

When studying the agrarian implications of large-scale land expropriations, scholars interpret these two concepts differently⁴⁸. Recently, some authors have focused on identifying the conditions *enabling* capital accumulation in the context of large-scale land expropriations. For example, Levien (2012, p. 936) has argued that ‘in creating a theory of contemporary dispossessions from land or other resources, the key question is not the origin of capital, but the reasons why capital in general requires – or more precisely attempts and achieves – forceful expropriation at any given place and time to sustain accumulation’. Following this he has redefined accumulation by dispossession as ‘a political process in which states – or other coercion wielding entities – use extra-economic force to help capitalists overcome barriers to accumulation’ (Levien 2012, p. 941). Similarly, Adnan (2013, p. 123) has proposed substituting primitive accumulation and AbD for the broader term capitalism-facilitating accumulation ‘which functions as long as the expansion of capitalist production continues to take place by extracting resources from co-existing non-capitalist sectors’.

The political Marxist or social-property relations analysis that these redefinitions of primitive accumulation and AbD draw upon (Brenner, 2011; Wood, 1995) is characterised by a forced demarcation between economic and extra-economic coercion⁴⁹ and between what is capitalist and what is not. This perspective poses problems for the study of contemporary large-scale land expropriations because it leads to the assumption that people today live outside capitalism or in minimal contact with capitalism⁵⁰. In addition, it makes capitalist development appear to be a deducible process from its supposedly essential features (Rioux, 2014; Robinson, 2007)⁵¹. Thus, by focusing on the *necessary* conditions for capital accumulation, authors drawing on this approach separate the question of primitive accumulation from that of workers’ labour and, therefore, from that of workers’ everyday lives.

⁴⁸ Although several authors have used the terms primitive accumulation and AbD to refer to the privatisation of land through the green economy, including tourism-oriented protected areas and forestry-related PES projects, they have not explored the agrarian transformations associated with this kind of enclosure. For this reason, the literature review that follows concentrates mainly on pieces of work that examine land enclosures in other contexts.

⁴⁹ The use of this forced demarcation between economic and extra-economic coercion is evident in Levien (2012, p. 940), where Harvey’s term AbD is criticised because ‘it does not tell us why capital would need to dispossess land rather than purchase it through the ordinary operation of real estate markets, or whether it will be successful, which is ultimately decided by the balance of class forces’.

⁵⁰ Levien (2012, p. 960) refers to the economy in his fieldwork area as ‘a minimally capitalist agrarian economy’ while Adnan (2013, p. 119) talks about ‘the persistence of a non-capitalist peasant sector in the Noakahali *chars*’. This assumption is also present in other research on large-scale land privatisations and agrarian change not necessarily influenced by political Marxism (Akram-Lodhi and Kay, 2010a; Hall, 2013). For example, Benjaminsen and Bryceson (2012, p. 336) note that ‘non-capitalist spaces and resources are opened up for accumulation through the combination of tourism and conservation’.

⁵¹ Marx (1973, p. 460) himself questioned this deductive method by suggesting that ‘in writing the laws of bourgeois economy it is not necessary to write the *real history of the relations of production*. But the correct observation and deduction of these laws... which point towards a past lying behind this system’.

Other authors have returned labour to the forefront of the study of enclosures, showing how the expansion of different sectors of the capitalist class relies upon the separation of workers from the conditions of their labour. By doing so, they also return the critique of capitalist society inherent in Marx's and Harvey's notions of primitive accumulation and accumulation by dispossession (Ayelazuno, 2011; Baird, 2011; Bush, 2008; Cáceres, 2015; Cross, 2013; De Angelis, 2001, 2004). This chapter takes a similar approach. It studies the privatisation of Bintang bolong through a focus on workers' experiences of and responses to it, exploring such experiences and responses through the study of changes in the conditions of workers' labour.

Although Marx saw land privatisations as central in primitive accumulation in that the forceful expropriation of people from the land leaves peasants with few options to subsist other than selling their labour-power (*ibid*, pp. 887-888), the research has not investigated primitive accumulation by searching for increases in landlessness and wage-labour. As discussed in chapter three, labour is the creator of use-values and therefore it is broader than wage-labour. Therefore, by focusing on labour this chapter does not attempt to provide an understanding of working conditions in a particular business created after a land expropriation (Li, 2011)⁵².

Since primitive accumulation is an ongoing process where workers are separated from the ownership of their labour (Marx, 1967, pp. 967-968; De Angelis, 2004), the chapter locates the privatisation of Bintang bolong in the broader context in which enclosures and the expansion of capital in Niomi have been reshaping the conditions of fishermen's and mollusc collectors' labour over the 2003-2013 period. Thus, the changes in labour conditions here mapped are also analysed in relation to AbD mechanisms such as neoliberal state policies in Senegal.

The chapter is organised as follows. The next section explores the role of state policies in Senegal in the process of primitive accumulation. This is followed by a discussion of fishermen's and mollusc collectors' experiences of and responses to the privatisation of Bintang bolong. The last section concludes with a reflection of the theoretical and political implications of this case study.

5.2. The role of Senegalese state policies in primitive accumulation

Broadening the view of primitive accumulation beyond the use of force in the acquisition by capitalists of means of production and beyond land expropriations involves understanding how land as well as not-land related state policies enable and accelerate the process of primitive accumulation. This approach is particularly relevant in the Senegalese context where the state has been fundamental in perpetuating the

⁵² Li (2011, p. 281) suggests that 'at the scale of agricultural enterprises, a labor perspective highlights the jobs generated, and the rewards received, by people who work in and around large farms'.

power of the (especially foreign) capitalist class in the organisation of the Senegalese economy. Although chapter two has already discussed the process of neoliberalisation in Senegal, this section recapitulates some of the main policies that are relevant to understand how villagers from Boko and Dioube have adapted to the privatisation of the mangrove forest.

Independence from France in 1960 did not lead to the start of a post-colonial and non-capitalist era. French goods continued to be imported after independence and during the 1970s foreign aid and multilateral development institutions promoted and financed large-scale agricultural projects aimed at developing export-oriented horticultural production that benefited European as well as US companies. These interventions introduced changes in the countryside, among others food security problems, growing reliance on money and the subsequent individualisation of the reproduction process (Mackintosh, 1989). The period from 1980 until present is an example of accumulation by dispossession whereby the growing indebtedness of the Senegalese state to the World Bank and the IMF led to the implementation of neoliberal policies promoted by these institutions. This acceleration of the process of primitive accumulation in Senegal materialised in the privatisation of water, electricity, agricultural parastatals and the subsequent concession of state-owned companies to foreign ones, namely French companies. It also involved the devaluation of the national currency, the removal of subsidies to farmers, increases in food imports, the elimination of consumption subsidies, the liberalisation of the finance sector and the appropriation by foreign capital of land and marine resources in the country (Dembele, 2003; Diouf, 1992; Koopman, 2012; Niasse and Seck, 2011; Oya and Ba, 2013).

Already, by the beginning of the 1990s almost all the companies in the manufacturing, mining and banking sectors in Senegal were owned by French capital. Moreover, penetration by Canadian, German and Japanese companies has increased over time. In order to enable the profitability of this capital, workers' wages were kept extremely low (Dembele, 2003; Diouf, 1992). More recently, during Abdoulaye Wade's government, natural resource as well as land acquisitions have become an important part of this process of neoliberalisation. Between 2000 and 2012 at least 16 per cent of Senegalese arable land was acquired. Those acquiring the land were generally foreign companies in partnership with wealthy Senegalese nationals, most of them within the government (Faye et al., 2011; Koopman, 2012). This process only continues to be intensified with a law that has recently been passed enabling local governments to give land concessions to private investors when the land is not being used by its owner (RdS, 2012).

5.3. Primitive accumulation as the alienation of fishermen's and mollusc collectors' labour

The case discussed here is in line with the view that Marx's notion of primitive accumulation as the divorce of workers from the conditions of their labour resonates

with his earlier definition of ‘estranged’ or ‘alienated labour’ (De Angelis, 2001; 2004). Alienated labour exists when workers are separated from (1) the object on which that work is performed (i.e. the type of activity they (can) do to access their needs); (2) the work activity itself; (3) the relations they establish with non-human nature within the activity of work and (4) the relations they establish with other humans in the labour process (Marx, 1959, p. 34; Marx, 1967, pp. 284-285). *Alienation* is therefore the continuous separation of workers from the objective conditions of their living (labour) capacity as capital penetrates their everyday lives (Marx 1973, p. 462).

Enclosures and depeasantisation before mangrove forest privatisation

Rural people’s progressive inability to meet their needs through economic activities they have historically worked on is a process some have referred to as ‘depeasantisation’. Depeasantisation involves the erosion of peasant forms of production and consumption that combined subsistence and commodity agricultural production (Araghi, 2009; Bryceson, 2000, p. 3; Padrão Temudo and Bivar Abrantes, 2013). For fishermen and mollusc collectors from Dioube and Boko, these peasant forms of production involved not only fishing and mollusc collection, but also farming⁵³.

Depeasantisation started before the closure of Bintang bolon. The start of this process in Boko and Dioube is associated with the implementation of neoliberal state policies that led to the privatisation of public agricultural companies and the removal of farming subsidies (Dembele, 2003). These policies affected most fishermen and mollusc collectors from Boko and Dioube, who lost the little support they were receiving from the Senegalese government for rainfed agricultural production: provision of ploughs, carts, seed drills and donkeys on credit (to be reimbursed after five years) and annual provision on credit of peanut seeds (to be reimbursed after the following harvest). Contrary to the usual notion of primitive accumulation where it is assumed that peasant production is non-commodified prior to enclosure, these policies alienated villagers from the object of their labour even though their access to farming tools was already commodified.

After the removal of state support, villagers had no other option than buy farming tools through the market, where costs have become unaffordable. As a consequence, villagers from Dioube have progressively seen their seed drills and ploughs deteriorate and their animals die without being able to replace them with new tools and animals.

It is in this context that villagers have lost their ability to access a large portion of their basic necessities through their own production, and that their reliance on money has increased. Excluding peanuts, the cultivation of which was imposed during French

⁵³ With the exception of members of a joint household in Boko, all mollusc collectors and fishermen from Boko and Dioube were practicing agriculture in the rainy season.

colonisation, all their production in the rainy season (millet, beans, corn and cassava) was consumption-oriented and contributed to their self-sufficiency. By 2003 farming households in Dioube and Boko were already failing to cover their consumption needs for the whole year through their rainy season production. That year, the average per household acreage of millet, the main consumption-oriented cereal crop grown in Dioube, was 1.5 hectares. According to interviews, an average household of six people consumes the millet harvested from this surface area over an approximate period of three months, depending on household size. In Boko the acreage of the fields that villagers farmed during the rainy season was even smaller, in most cases not surpassing one hectare.

Horticultural production, an activity practiced mainly by women and therefore by mollusc collectors and fishermen's female relatives, has also been experiencing problems. Despite not being affected by the removal of government subsidies because it did not require animals, carts and seed drills, the rewards horticultural producers obtained from their labour in this activity were meagre (including the size of their production and the money earned from sale). An important reason for this was the fact that for years, cows had been entering horticultural producers' fields and eat their production because villagers were not able to afford fences and could only protect their fields with prickly plants. Describing this situation, a former fisherman and horticultural producer from Dioube said: 'you could not sleep, you would always be thinking about the cows... we would spend the whole day there and then they would come at night and eat our production...the year I stopped gardening the cows had eaten all my tomatoes while I was sleeping...when I saw that I cried' (interview with Modou Seidi, 4 March 2014).

Although these problems did not result from a specific enclosure, as in the case of rainfed agricultural production, the persistence of these problems with cows is related to related to the limited support that the poorest receive in neoliberal capitalist societies such as the Senegalese. It was only until 2009 that the AMI and the EDA projects financed the fencing of land for horticultural production.

This crisis in consumption-oriented farming activities went hand-in-hand with an increase in the amount of imported food sold by local shops. Shops started selling bread (which was not purchased previously in the area), imported onions from the Netherlands, rice from Thailand, potatoes from France and bread made with imported wheat flour. As in other countries of the global South experiencing depeasantisation (Araghi 1990; Arrighi 1970), the traditional diet based on food produced by villagers (millet, rice, peanuts, corn and beans) has progressively incorporated a large number of non-locally produced foods. Thus, during breakfast villagers have replaced millet couscous for bread (often eaten with a sauce made of local beans), milk and coffee. At lunchtime imported rice is consumed instead of millet couscous. Some villagers have suggested that they feel they eat better. 'Before we didn't eat properly, now we eat food with vitamins' (interview with Mariama Diankong, 12 March 2014).

This increase in the number of imported goods being sold in the village together with the crisis in consumption-oriented agriculture meant that money became increasingly important in their lives. This growing reliance on money benefited agrofood companies exporting products to Senegal who have gained new customers. In addition to villagers' growing dependence on money to meet food consumption needs, money has become the main means through which they can access items that improve their living conditions such as roofs, concrete for the house, mattresses, beds and clothes, as in other cases in Sub-Saharan Africa (Arrighi, 1970).

The role of fishing and mollusc collection before mangrove forest privatisation

In this context, in which consumption had become increasingly commodified, fishing and mollusc collection in Bintang bolong enabled villagers to raise the money needed to cover the costs of most of their households' basic needs (monthly costs of feeding an average household ranged between 33,375 CFA and 57,375 CFA in 2013 and presumably less in 2003). Villagers' labour was already alienated in these activities because, by being commodified, the rewards that they could obtain through them depended on their ability to sell the product of their labour in the market, on the negotiation around prices in the market⁵⁴ and, indirectly, on the dynamics of capital accumulation shaping food commodity prices.

Mollusc collection in Bintang bolong was only practiced by villagers living in Boko, all of whom were women, with two exceptions. Mollusc collectors from Dioube did not work in Bintang bolong because they lacked boats and renting them is expensive (between 500 CFA to 800 CFA per person in addition to oil expenses). With the exception of two, all households in Boko had at least one adult practising this activity and, for the majority of those engaged in mollusc collection, this was their main economic activity (11 out 15 mollusc collectors).

For those relying primarily on mollusc collection, the abundance of molluscs in Bintang bolong enabled them to earn up to 605,000 CFA (909.70 euros) per year, that is a maximum of 50,416 CFA (77 euros) if income is divided per month, although according to some villagers this is a high estimate. This income allowed women in Boko to be economically independent, therefore enabling those who separated from their husbands to remain in Boko and to have their own means of production. One of the mollusc collectors from Boko raised enough money through mollusc collection to buy a boat for her activity.

⁵⁴ Fishermen would sell in their villages and in Emssirah, the main village in Niomi, whereas mollusc collectors would sell in local markets close to Niomi. None of their customers were private companies.

Unlike mollusc collectors, who all had the same tools (gloves, a knife and firewood for cooking the molluscs), fishermen had different tools. As table 5.1. shows, these differences enabled some fishermen to earn more profit from their labour in this activity than others, even though all of them had access to the same resource-rich bolong.

The fishermen earning the largest income were a group of seven brothers whose only economic activity was fishing and had motorised small boats and large nets. Those men (four from Dioube and one from Boko) who owned small non-motorised boats and nets did not go fishing as often, especially those living in Dioube. Since the amount of the fish they collected was smaller, their monthly income was smaller too, ranging between 35,000 CFA (53.4 euros) and 100,000 CFA (152.7 euros) per month, for those fishermen who would go fishing more often. However, since they were working individually, their income could be higher than that of the fishermen with a motorised boat, who had to share the profits with their brothers. In any case, the income earned by the fishermen owning a motorised boat during the dry season, together with the income generated by their wives through mollusc collection, allowed them to rest during the rainy season in their home village, located on another island in the Sine-Saloum delta.

Means of production used to fish		Amount of fish captured each time	No. of hours spent fishing	No. of times fishing in Bintang per month	Approximate monthly income
Motorised boat and large net (n=7)		6-20 washing-up bowls	4	28-30	300,000-600,000 (43,000-85,700 CFA per brother)
Net and boat with no engine=5	Dioube n=4	6 washing-up bowls	2-3	7-8	35,000-100,000 CFA
	Boko n=1	6 washing-up bowls	2-3	12-30	
Hook and line n=7		1-5 washing-up bowls	2-3	5-8	5000-40,000 CFA

Table 5.1. Comparison between fishermen's conditions of production and their profits from fishing in the now-privatised bolong before 2003

The rest of the fishermen (seven men all coming from Dioube) would fish with a hook and a fishing line. For them, fishing was an arduous task and not highly rewarding as they would earn between 5000 and 40,000 CFA (7.6 and 61.1 euros) per month, but it allowed them to have fish and to save some money for consumption. As a man who used to fish with hook and line put it: 'it had to be tiring so we would have our profit' (interview with Aliou Mane, 25 February 2014). This low income was also related to the fee they had to pay to boat owners. To get to Bintang bolong, they had to pay a 250 CFA (0.40 euros) fee to a boat owner from the village, generally another fisherman that would take them to Boko (then they would walk to Bintang bolong). This fee reduced the income that fishermen who lacked boats could earn from their labour when going to Bintang bolong. As in other cases, differentiation with regards to fishermen's means of production did not only led to income differentiation, but also to relations of

exploitation between them (i.e. appropriation of a portion of some fishermen's labour-time by other fishermen) (Bernstein, 2010; Howard, 2012; Lenin, 1963, pp. 73-172).

Depeasantisation through the closure of Bintang bolong

After the closure of Bintang bolong, fishermen and mollusc collectors had to do these activities in the bolong connecting Boko and Dioube (see image 3.3, chapter three). Due to the low productivity of this bolong, villagers are not able to earn as much as they did when fishing and collecting molluscs in Bintang bolong.

Since fishing was their main economic activity, the brothers who owned a motorised boat and big nets have continued doing this activity. However, they earn almost half of what they earned before the closure of Bintang bolong even though they work the same number of hours (interview with Saliou Ndong, 18 January, 2014). Three of those who owned a non-motorised boat and smaller nets have continued fishing, while two have abandoned the activity, one due to his old age and the other due to the closure of the bolong and his new job in the campement of the protected area. They have experienced greater losses than those fishermen with motorised boats: whereas before they used to take between 10 and 20 kilograms of fish, the amount they take now does not exceed the five kilograms. One of these fishermen said, 'now if you go during the day you throw the net and you don't get anything' (interview with Sambel Diasi, 18 February, 2014). All those who were fishing with a hook and lines have abandoned fishing, but two young men from Dioube told me that in some occasions they go to Bintang bolong at night, when guards cannot see them.

The closure of Bintang bolong reduced income generated through mollusc collection by more than a half. Six (four women and two men) out of the 15 villagers from Boko who were doing mollusc collection have abandoned this activity. The two men who abandoned this activity did not have mollusc collection as their main economic activity. Two of the women who abandoned mollusc collection were married and had additional sources of income as their husbands became reliant on the tourism industry soon after the closure of the bolong. One started working on the campement in the protected area and the other one started co-managing the campement in Emssirah with his Belgian partner. The other two women who abandoned mollusc collection decided to return to the husbands they had separated from. According to discussions with mollusc collectors and with the son of one of them, these decisions were influenced by the economic losses resulting from the closure of the bolong.

As a result of the economic losses, those villagers who have continued fishing and doing mollusc collection have had to develop adaptive strategies. As the two following sub-sections will show, their strategies can be divided into two paths, both of which show that workers may encounter new alienating situations even when they try to escape from alienations experienced in the past (Lefebvre, 2002, pp. 208-212).

The first path, followed by those who continued to collect molluscs and fish after the closure of Bintang bolong, involved an increase in the number of petty commodity producing activities performed by each individual as a way to compensate for the decrease in the rewards they obtained from their labour working in the other bolong. The second path, followed by those who have abandoned fishing and mollusc collection, involved partial or full proletarianisation through migration and through wage-labour in nature-based tourism businesses in the local area later on. The next two sub-sections discuss these paths.

Alienation in the act of production and the multiplication of villagers' petty commodity-production activities

Those who continued doing mollusc collection (only women after the closure of the bolong) had to engage in additional petty commodity production and petty trading economic activities. The ways in which their labour process has changed with these new PCP activities reflect what Marx saw as alienation from the act of production, whereby workers lose ownership of the conditions of the labour process such as the time and effort spent in their activities, therefore finding it difficult to find pleasure in work (Marx 1959, pp. 30-31). Thus, although the most evident and perhaps the most intense form of alienation in the act of production may be the production of commodities for a capitalist owner, the case of mollusc collectors suggests that alienation can also be experienced through petty commodity production (Bhattacharya, 2014)⁵⁵.

For mollusc collectors, their act of producing commodities on their own account became alienating at an aggregate level. Due to the multiplication of their PCP activities, the total amount of time and effort they needed to spend to secure subsistence increased. They first tried to compensate for the more than 50 per cent decrease in the amount of oysters collected and the practical absence of cockles in the bolong where they work today by increasing oyster prices by 67.6 per cent and common cockle and bloody cockle prices by 33.3 per cent. Price changes did little to solve the problem because they did not cover all the losses caused by the closure of the bolong or provide the money needed to secure basic needs. Thus, they had no other option than to find alternative sources of subsistence, including horticultural production, hibiscus farming, straw brush making and sale of handicrafts to tourists.

Although the multiplication of their economic activities was an attempt to escape from the alienating conditions that the privatisation of the bolong had created (i.e. the economic losses) and to improve their living conditions, these mollusc collectors'

⁵⁵ Given space constraints this chapter will not enter the debate around the conceptualisation of PCP as capitalist exploitation and of petty commodity producers as proletarians (Bhattacharya, 2014; Harriss-White, 2014). However it is perhaps necessary to mention that the focus on alienation allows us to study the commonalities across different labour categories while capturing the specific ways in which alienation from the act of production is experienced in each of them.

working day has become alienating. Those who have engaged in horticultural production need to spend more time and effort meeting their basic needs due to the convergence of the oyster collection season with the irrigation period for horticulture. A woman who was part of the joint household exclusively reliant on fishing and mollusc collection prior to the closure of the bolong said: ‘we would not be doing this [i.e. growing vegetables] if the bolong would be open’ (interview with Binta Ndiaye, 12 December 2014). She and other women living in this household said that they did not like this activity as they found it tiring, especially irrigation, since they need to take water manually from a well. However, for them this was the only option they had if they were to feed their children and pay for school materials. In the various conversations I had with them during fieldwork, ‘dañu sonn’ (‘we are tired’ in Wolof) was a frequent sentence they used to explain their feelings about this.

The income they obtain from horticulture fails to cover the economic losses caused by the closure of the bolong. While annual losses are approximately 62,857 CFA (96 euros) per woman, their annual income from horticulture ranges between 10,000 (15.23 euros) and 40,000 CFA (62 euros). In addition, women have started paying for their means of horticultural production, including seeds and fertilisers, thus putting money into circulation that could otherwise be used to buy food. This consumption of inputs has served the interests of other capitalists, in particular owners of pesticide, seeds and fertiliser businesses, but it has not resulted from a conscious strategy led by owners of these companies. Instead, it is the result of mollusc collectors’ need to adapt to the losses generated by the privatisation of mangrove forests in a context where access of agricultural means of production has become increasingly commodified. This suggests that through their conscious adaptations to alienation, workers unintentionally “create” the domination of those powers that separate them from the ownership of their labour (Holloway, 1997; Marx, 1959, p. 33).

Given the low profits generated by horticulture, women who continued to collect molluscs had to engage in other economic activities, including reselling handicrafts for tourists visiting the village in the dry season and growing hibiscus during the rainy season. These activities increased the total labour-time and effort spent on securing subsistence and often interrupted their moments of rest. During my stay in Boko, women would often leave their homes in the middle of their breakfast to attend to customers in the handicraft market. Moreover, by engaging in these new economic activities, these villagers need to invest money in the production/trading process that could otherwise be spent on their basic consumption needs.

Those men who have kept fishing have also encountered new alienating conditions as they sought to compensate for the income decrease following the closure of the bolong. The brothers who own a motorised boat tried to compensate for the scarcity in the bolong next to Boko by going once a week to the ocean, where large fish are available, but this also means they have to spend four times more money on oil. Although seemingly insignificant, this consumption in turn becomes a means of accumulation by

oil companies. Since going to the ocean is not enough, these fishermen had no other option than start working during the rainy season, which used to be their resting period.

Like mollusc collectors, they have engaged in other petty commodity production activities, which include collecting molluscs for their wives, growing hibiscus and collecting straw. Whereas the two former activities count as PCP, the latter involves working for a capitalist owner. As in the case of mollusc collectors' consumption of farming inputs, fishermen's attempts to cope with the labour conditions generated after the closure of Bintang bolong have enabled tourism companies to find people who will collect the straw that will be used to make hotel rooms. Despite being an alienating activity that benefits a capitalist owner, villagers have used straw collection as a means of adapting to the situation in which they live after the creation of the protected area. For example a fisherman from Boko has used the money he has been earning from straw collection to buy an engine for his boat (interview with Modou Ndong, 12 December 2014).

Two of the three fishermen owning non-motorised boats who have kept fishing have engaged in new petty commodity production activities, in their case fruit (cashew nut and mango) farming on their own land. As discussed in chapter four, in mango production, these villagers have started exploiting poorer villagers who pay them a fee to collect the mangoes and sell them. These relations of exploitation resonate with the alienation of human beings from the greater human community to which they belong identified by Marx (1959, pp. 31-32).

Despite the increasing importance of money and the emergence of relations of exploitation between villagers, mollusc collectors have also been able to find support from other villagers when adapting to the closure of Bintang bolong. For example, women in Boko help each other to attend to the tourists at the handicraft market created as a part the 'responsible tourism' project implemented by the Italian NGO in 2009. Thus, when some women are out doing mollusc collection, the others attend to the tourists and then those who have stayed in the market give the money to the women who were out collecting molluscs. As in other parts of Senegal (Guérin, 2006), in Boko some villagers have found support from other villagers through the credit group association.

Adapting prior to and after land enclosure: becoming and being labour-power for capital

As the following quotations by two men who used to fish with a hook and line indicate, it is important to note that, although large-scale land acquisitions are problematic, their implications for changes in the conditions of workers' labour depend on workers' relation to the means of production before the enclosure. 'Fishing would only provide me with money for consumption and that is why I decided to migrate to Dakar in 2001'

(i.e. before the closure of the bolong) (interview with Ansou Seck, 2 March 2014). ‘The closure of the bolong did not change anything for me because I do not have a boat and I do not have a net’ (interview with Doudou Mane, 15 March 2014). These fishermen migrated without having been separated from their agricultural land or the mangrove forests they depended on. Instead, their migration was, as in other cases of migration by Senegalese fishermen (Binet et al., 2012), a response to the rewards they could obtain from their labour-time and effort. Such rewards were not only influenced by their fishing tools, but also by the fees they had to pay to boat owners to arrive to Boko.

In addition to these two interviewees, the other five men who used to fish with a hook and a line also left Dioube, some before the closure and others afterwards, when they found the opportunity to go. Their decisions to migrate were taken in a context in which migration has become a frequent means for Senegalese rural inhabitants to improve their living conditions (Cross, 2013; Flahaux, 2015; Mondain and Diagne, 2013).

Fishermen’s working conditions in their migrant destinations suggest that, as Lefebvre (2002, pp. 207-210) noted, even when workers try to cope with alienating situations, they may still become engaged in activities and socio-economic relations in which they have little control of the conditions of their labour. All of the former fishermen who migrated worked for a capitalist owner in their destinations, working in factories, on fishing boats and at construction sites. Their wages were low and uncertain, never surpassing 5000 CFA (7.60 euros) per working day. In the interviews and discussions I had with these men, they said that they found their work tiring and unreliable. For example, a man who used to fish with a hook and line and started working in a plastic furniture factory in Dakar described to me the process that made him return to Dioube as follows: ‘if there were no orders those of us who were daily workers would not be asked to come to work. There was a strike and after it many workers gained fixed contracts and better conditions, but I didn’t so I continued as a daily worker. In the end I did not have money to send to my wife and the children’ (interview with Doudou Mane, 13 December 2013).

Like him, the other fishermen who migrated also talked about their negative experiences of work in their destinations during the interviews and discussions I had with them. A man who went to Mauritania and spent some time working there as a builder said that one of the main reasons behind his decision to return to Dioube was the harsh working conditions he encountered (interview with Aliou Kamara, 13 November, 2013). Another man summarised his experience of migration in the following sentence: ‘I worked a lot and earned little’ (interview with Lamine Seidi, 16 December 2014). Thus, although many Senegalese migrants plan to return to the village after finding better economic conditions (Flahaux, 2015), the reality in Dioube has been that the return to the village has been a means of escaping from and adapting to alienating labour conditions.

For some villagers the return to Dioube has been a difficult process because their labour became not only a means to survive but also to pay the debts that their relatives had

incurred with the shopkeeper (in one case the debt was 200,000 CFA) while they were away. One of the interviewees who had to pay his family's debt referred to this alienation, associated with dependence and aid relations at the household level, as follows: 'it is not easy to be in the city and go back to the village with nothing, it's even dangerous' (interview with Lamine Seidi, 16 December, 2014).

Their need of money on their arrival in the village meant that, with the exception of one, all those returned migrants who were previously fishing with hooks and lines have become workers in tourism businesses. In addition, although some fishermen and mollusc collectors have not become proletarians, their sons, daughters and wives have also experienced this form of alienation. Today 40 per cent of all men and women from Dioube and Boko who spend most of their labour-time working for a capitalist owner in tourism businesses in the area come from households affected by the closure of Bintang bolong. In Boko, a village largely dependent on the resources in Bintang bolong prior to its closure, this percentage is 75 per cent. In addition, some of the men who abandoned mollusc collection and two of the men who have kept fishing with non-motorised boats have worked as temporary wage-labourers for tourist businesses.

Similarly to employees in the Petite Côte, the main tourist destination in Senegal (Diagne 2004, p. 481), the salaries these villagers earn in these jobs range from 1000 CFA (1.50 euros) to 2500 CFA (3,80 euros) for a working day that lasts between 8 and 10 hours, which means a monthly salary of no more than 37,500 CFA (57.25 euros). Thus, in households where these wages are the only source of income, villagers have problems meeting their basic needs and improving their living conditions.

Capital and the production of space: tourism and villagers' changing relations with their surroundings

Although not all enclosures are space-related (De Angelis 2004), this case study shows that the alienation of human beings is reflected in, endured and experienced through spatial practice (Lefebvre, 1991a, pp. 98-99; *ibid*, pp. 234-235). As in other enclosures (McCarthy, 2004), the creation of Bintang protected area involved the privatisation of the right to make decisions about the use of the resources there, leading to the transformation of terrestrial and mangrove forests into a space exclusively used for tourism purposes.

Some of the brothers who were fishing with motorised boats were born and raised next to Bintang bolong. More than four decades ago their older relatives had moved to the island where Boko is located, attracted by the resources in Bintang bolong. The privatisation of Bintang bolong did not only affect them in terms of income, it also had a symbolic meaning. When I asked one of the fishermen from this household how he felt about the closure of the bolong he replied with an angry expression, saying 'we used to live there' (interview with Modou Ndong, 13 January 2014).

The creation of Bintang protected area limited villagers' ability to freely use their labour in such space, thus contributing to separate them from their relation to non-human nature (what Marx [1959, pp. 31-32] identified as alienation from species-being). Given the protection that Atlantis has had from the state, such alienation has involved experiencing state repression in various occasions. Several villagers have been fined and arrested for fishing in mangroves and for transporting *ditakh* (a local fruit) from trees located in what is now Bintang protected area. After these incidents, some men have had the courage to continue fishing illegally in Bintang bolong. However, now they can only go at night and the feeling of working in this space is different. One of them said: 'before you were not afraid of anything and you could speak as loud as you wanted, now you are obliged to hide' (interview with Lamine Diasi, 13 March 2014).

These forms of spatial alienation take place in a broader context in which the proliferation of tourism businesses in the area is transforming villagers' relations with their surroundings as in other tourism areas in Senegal (Diagne, 2004). For example, the number of boats crossing the bolong where fishermen and mollusc collectors work today has increased substantially in the last decade. According to some fishermen from Dioube the noise that these boats make keeps the fish further away from the village. As a consequence, those men from Boko and Dioube who have continued fishing can only do this activity at night when the bolong is calm.

In this context of tourism development, Boko has become a 'village-museum' due to its appearance as a traditional African village. Today visitors staying at the campement in Bintang protected area, and more frequently those lodged in other hotels located in Emssirah, pay for guided tours to visit Boko and Dioube (more frequently the former). Tour guides employed by these hotels often do not respect villagers' private space when showing tourists the village. A young man from Boko explained to me why this makes some villagers uncomfortable: 'they come to our houses without asking permission, they even enter our toilets' (interview with Lamine Somko, 14 January 2014).

Moreover, the two main hotels located in Emssirah have occupied some of the surface in the coastline of Boko to make space for a viewpoint exclusively used by their customers⁵⁶. Some hotels in the local area organise hunting tours and despite the apparent commitment of the state to conservation, the forests next to the protected area are burnt every year around late February to allow customers from these businesses to see their prey better. As I witnessed during my fieldwork, these fires reach the entrance of the village and villagers have to stop them so they do not destroy their houses, most of which are made of straw.

Villagers have become conscious of the growing power of tourism businesses in the

⁵⁶ Next to the viewpoints there are signs saying 'propriété privée' (i.e. private property) and the name of the hotel.

area and have sought to transform this spatial alienation into an opportunity. As part of the nature-based tourism project led by an Italian NGO, young men from Boko engaged in the construction of the handicraft market and the community-based restaurant. These infrastructures have been built at the entrance of the village and occupy a considerably large surface. Several years after the implementation of this project some of these young men associated to create a tourism business and build a campement on the coastline of their village.

Around that time, in December 2013, Dioube became the village where tourists would take the boat going to Bintang protected area⁵⁷. Every Sunday since mid February until the end of March around 20 young men, some of whom used to fish in Bintang bolong, from Dioube got together to build the new welcoming house of the protected area. Each work session lasted around five hours and involved going to the forest, cutting wood, collecting straw, digging and unifying the straw to make the walls of the new welcoming house.

Since none of the young men was getting paid for these activities and some of them had already expressed their disagreement with the closure of the bolong, I asked them about their reasons for participating in these work sessions. Most of them expressed their desire to improve the village as well as their living conditions. For example, one said ‘have you seen how beautiful Ndiama (i.e. the village where Atlantis’ local partner lives) is? Well, that is how Dioube is going to be in the future’ (conversation with Mamadou Diasi, 13 March, 2014). Another young man who works as eco-tour guide for one of the two main hotels in the area said: ‘with this change more tourists are going to come here and perhaps I can organise visits to the village and earn some money’ (Samba Senghor, 25 February 2014).

These examples show how workers cope with alienation by adapting their plans to the transformations that go hand in hand with capitalist development, in this case, tourism development. They also suggest that alienation is experienced through the activity of work (Holloway, 1997) and that workers are central in the production of space in capitalist societies (Herod, 1997).

5.4. Concluding remarks

When explaining his use of sadist scenes in his film *Salò*, Pier Paolo Pasolini argued that it was a metaphor to illustrate ‘how power reduces human bodies to a thing and how, by doing so, it commercialises them’⁵⁸. To show this subjugation of bodies, of human life to capital was, I believe, Marx’s intention when developing his critique of

⁵⁷ The reasons behind this change are explained in chapter seven, which focuses on workers’ contestation of exploitation and expropriation in the green economy.

⁵⁸ Interview with Paolo Pasolini. Available from: <https://www.youtube.com/watch?v=dBH91cuBwLQ>

political economy. Current redefinitions of primitive accumulation and accumulation by dispossession in research on the agrarian implications of large-scale land expropriations have, however, taken a different path. By focusing on what enables capital accumulation, they neglect the most significant and enduring implication of enclosures: the divorce of workers from the ownership of the conditions of their labour and the subsequent transformation of their everyday lives.

Against this background, this chapter has explored such aspects through the study of fishermen's and mollusc collectors' experiences of and responses to the privatisation of 1,800 hectares of mangrove forest within the broader process of primitive accumulation and capitalist development in Boko and Dioube. In common with previous research on the agrarian implications of enclosures and capitalist development (Akram-Lodhi, 2007; Araghi, 1990; Arrighi, 1970; Baird, 2011; Cáceres, 20015; Cross, 2013), the chapter has illustrated a process of depeasantisation, of labour intensification via the multiplication petty commodity production activities and proletarianisation, and of spatial as well as environmental transformations through tourism development. What this case adds to this literature is the recognition that workers' alienation and hence their actions to cope with alienation are a central aspect in the agrarian transformations that go hand in hand with large-scale land expropriations and, therefore, primitive accumulation.

The example of fishermen and mollusc collectors from Boko and Dioube shows how enclosures do not only alienate workers by separating them from the land, but also by imposing the generalisation of commodity production in society (Gibbon and Neocosmos, 1989; Lerche, 2007; Taylor, 2002). However, primitive accumulation does not end once workers' labour has become commodified. As workers adapt to the labour conditions imposed through enclosures, they continue to experience alienation in the daily process of securing subsistence, contributing to capital's daily needs due to their search for money and other commodities (Arrighi, 1970; Holloway, 1997). This case study has demonstrated that such experiences of and responses to alienation differ from one worker to another and are influenced by their access to means of production other than land and to sexual divisions of labour and household relations.

These findings have the following politico-theoretical implications:

- a) The violence of primitive accumulation lies not only in the use of coercion during an expropriation, but also in the fact that the capitalist class survives by systematically shaping workers' use of time, effort and space as well as their relations with other humans and nature as a result. Such power to alter everyday living conditions, illustrated here, is not the consequence of a direct relation between a capitalist owner and alienated workers producing commodities for him. Rather, it is the materialised result of a relation (i.e. capital) between alienated human beings (albeit in quite different conditions) that expands in society, hence an *indirect* one (Kicillof and Starosta, 2007). As this case study has shown, while it may be true that those who are affected by land grabbing

may try to find benefits from land expropriations (Mamonova, 2015)⁵⁹ and that employment in large farms could provide an alternative source of living to those affected by large-scale land expropriations (Li, 2011)⁶⁰, these choices are responses to their alienation in a context where capitalists have increased their power to shape everyday life. For fishermen and mollusc collectors from Boko and Dioube, such class power has manifested in a wide range of complications found in the process of adapting to various enclosures. These findings contrast with the view in land grabbing research that ‘the more adaptive peasant responses lead to more advantageous positions of their households in rural communities’ (Mamonova, 2015, p. 628). Workers’ attempts to find benefits within capitalist development may suggest that they are actually aware of such class power and therefore of their need to adapt to a social system that they have little ability to reverse (Arrighi, 1970, p. 224).

- b) The relationship between capital accumulation and labour alienation illustrated in this case study brings into question the idea that the agrarian question today is that of labour, which is now separated from its historic connection to the agrarian question of capital (Bernstein, 2004a, 2004b, 2006). Moreover, it suggests that Bernstein’s thesis fails to appreciate the continuation of the exploitation of Sub-Saharan African countries today by capital coming from the global North, as Moyo (2008, p. 75) noted. It is necessary to note that the benefits that capitalist owners gain from particular enclosures are not the result of a conscious struggle on the part of the capitalist class even though enclosures are themselves the result of a conscious decision by capitalist owners. The relationship between workers’ alienation and capital accumulation is mediated by workers’ chosen adaptations to the labour conditions imposed through enclosures. Thus, in the case here studied, the capitalist owners who benefited from fishermen’s and mollusc collectors’ adaptations to the closure of Bintang belong were, in addition to those owning the campement in the protected area, those whose commodities and money converged with villagers’ everyday survival needs at a given point in time and space. Workers’ everyday struggles to survive and, potentially, their initiatives to develop non-capitalist economies, need to become central in future research on primitive accumulation.
- c) In relation to the above point, this case study has shown that primitive accumulation is a context-specific and unpredictable process. Fishermen and mollusc collectors have shaped this process through their individual and collective agency. Furthermore, the changes in fishermen’s and mollusc

⁵⁹ Mamonova (2015, p. 607) suggests that ‘peasants are more concerned with personal gains from land grabs than with benefits for the whole community’ and that ‘the rural propensity to adapt and find benefits even in land grabbing can play an important role in shaping policies of rural social movements and developing recommendations to governments and investors in regard to large-scale land acquisitions (*ibid*, p. 629)’.

⁶⁰ Li (2011, p. 281) argues that ‘unless vast numbers of jobs are created, or a global basic income grant is devised to redistribute the wealth generated in highly productive but labor-displacing ventures, any program that robs rural people of their foothold on the land must be firmly rejected’.

collectors' labour mapped here have been influenced by the biophysical characteristics of the appropriated bolong and of the bolong they had to rely upon (Sneddon 2007), by their instruments of labour (Howard, 2012), by household relations and by the repressive power of the state (Lefebvre, 2002, pp. 208-212). These specificities should not prevent us however from finding commonalities between workers' everyday lives in different parts of the world.

- d) The trap of alienations villagers have fallen into while trying to liberate themselves from the conditions imposed by the process of primitive accumulation illustrated in this chapter raises concerns for the future of these rural populations and, potentially, for others experiencing expropriation. Overcoming this situation will not be an easy task as it will require well-organised popular mobilisation and it will involve repression. However, a useful starting point is to reject large-scale land expropriations, the social relations of capitalist production and the accomplice role of the (Senegalese) state in the worsening living conditions of rural populations. Scholars should contribute to this process by providing a critique of everyday life in capitalist societies. This should involve, as I have attempted to do here, using concepts and theories in ways that enable us not to find the right observations and deductions that confirm a particular theory, but to contribute to the writing of the actual (violent) history of the social relations of capitalist production.

6. Value is still labour: exploitation and the production of environmental rent and commodities for nature tourists

6.1. Introduction

This chapter explores the relationship between the social relations of production in nature-based tourism and forestry-related PES projects and working conditions in this context. It does so by studying the case of Dioube and Boko where there has been a rapid increase in the number of men and women working in the nature-based tourism sector and in paid mangrove reforestation campaigns over the past decade. These changes are taking place in a broader global context where monetary incentives are being promoted as the main vehicle for saving nature. Such promotion has gone hand in hand with the development of tourism that involves conservation programmes or that uses already preserved natural landscapes as its main tourist attraction (Brockington et al., 2008, p.134; Duffy, 2015; Fletcher, 2011; Fletcher and Neves, 2012; Neves, 2010). It has also led to the creation of forestry-related PES schemes such as REDD+ and CDM. In these programmes the institutions leading these projects pay villagers, states and other actors for their role in forest preservation, restoration and reforestation in countries of the global South (Böhm and Dhabi, 2009; Bumpus and Liverman, 2008, 2011; Reyes, 2012).

These developments have been interpreted as new forms of profit-making that do not rely upon the exploitation of labour. They have been conceptualised as a 'conservationist mode of production' (Garland, 2008), 'accumulation by conservation' (Büscher and Fletcher, 2015) and 'accumulation by decarbonisation' (Bumpus and Liverman, 2008). Some have argued that in these contexts non-human nature is being turned into a commodity capable of producing value and therefore capital accumulation (Bumpus and Liverman, 2008; Bumpus, 2011; Büscher 2013; Lohmann, 2012⁶¹; Osborne, 2015, p. 74; Sullivan 2009, 2014; Sodikoff, 2009, p. 447). Others have contended that in nature-based tourism and ecotourism value is generated through prosumption (i.e. production by consumers) (Büscher and Igoe 2013), as ecotourists and those on safaris engage in the coproduction of ecotourism commodities in addition to being consumers of 'capitalist conservation' (Fletcher and Neves, 2012). In addition, several scholars have suggested that the growing number of actors earning money through their leadership in conservation projects is an indication that 'value in contemporary capitalism is increasingly located in 'expert ways of meaning' and 'institutional contexts of production' and therefore 'it is not the muscle-power of people that provides the most highly valued labour forms' (Graham in Büscher and Igoe 2013,

⁶¹ However, in a presentation at the University of East Anglia in 2015 Lohmann highlighted the need to put class relations at the centre of the study of carbon projects (Lohmann, 2015).

p. 289; Graham in Büscher 2013, p. 28). Some authors have gone further to argue that these forms of accumulation ‘challenge dominant (Marxist) ideas about the relationship between value, production and nature’ (Büscher, 2013, p. 20) and that there is a danger in being overly productivist in contemporary capitalism where value is hybrid (*ibid*, p. 31).

By investigating the relationship between working conditions and the specific aim and relations of production in nature-based tourism and in PES projects through the case of Boko and Dioube, this chapter seeks to explore the validity of these interpretations and to understand what it means to look at the making of green economies through the activity of work. This is an important question in a context where green jobs are being promoted as a solution to poverty (UNEP, 2008, 2011) but also criticised for their short durability and the meagre wages earned by workers from these jobs (Checker, 2009; Lohmann, 2001; Nuñez and GenderCC, 2009).

Exploring how the specific aims of production in nature-based tourism and PES projects shape working conditions in these contexts is also a relevant question because terms such as ‘conservationist mode of production’ and ‘accumulation by conservation’ do not explain the way in which nature-based tourism and PES schemes (differently) contribute to the accumulation of capital. Through the study of this question, the chapter shows that conceptualisations of the green economy that ignore the role of labour in the making of green economies serve to silence the social relations of exploitation behind the expansion of capital in these contexts.

The chapter proceeds as follows: the next section challenges the idea that non-human nature is a commodity and, drawing on Marx’s notions of commodity and value, it redefines nature-based tourism and PES schemes accordingly. Taking these redefinitions into consideration, the case study is discussed in the following section. The last section concludes.

6.2. Beyond the commodification of nature: commodity production, environmental rent and labour-power consumption in emerging green economies

This section first shows how the idea that nature-based tourism and PES schemes indicate the turning of non-human nature into a profit-generating commodity is associated with a lack of engagement with the concepts of the commodity and value. It then proposes an alternative perspective that explains the differing relationships of nature-based tourism and PES schemes with the accumulation of capital by drawing on Marx’s work and on recent research on tourism and ‘climate rent’ (Felli, 2014; Jones, 2009).

Marx’s notion of the commodity enabled him to explain the specific functioning of the capitalist mode of production and show that the exploitation of labour is the basis of capitalist profit. Common to all the pieces of work where forestry-related PES schemes

and nature-based tourism are defined as forms of profit-making based upon the turning of non-human nature into a commodity (Brockington and Duffy, 2010; Büscher, 2013; Sodikoff, 2009; Sullivan, 2013, 2014) is the lack of detailed definitions of the commodity and value. Similarly, and as noted by Robertson and Wainwright (2013), in-depth discussions of these concepts are also absent in the environmental geography literature proposing the idea that the mercantilisation of natural resource commons involves the commodification of nature (see Bakker, 2005; Castree, 2003; Prudham, 2009).

Castree (2003, p. 278) defines commodification as ‘a process where qualitatively distinct things are rendered equivalent and saleable through the medium of money’. He argues that ‘not all capitalist commodities adhere to the labour theory of value in a strict sense’ (*ibid*, p. 281) and that what makes capitalist commodities into commodities is that their production, distribution and exchange is driven primarily by the profit imperative (*ibid*, p. 282). However, he does not go into detail about the term value and its relationship to the commodity. Similarly, Bakker (2005, p. 545) defines commodification as a process ‘whereby goods formerly outside marketised spheres of existence enter the world of money’. Although the meaning of the commodity could be inferred from this notion of commodification, she does not provide any definition of the term.

The above definitions of commodification as well as the absence of discussions about the commodity concept within these definitions fail to resolve the question of whether and how non-human nature can be turned into a commodity without labour having interfered in the process. This is an important question because if anything can become a commodity and if value and profit do not necessarily represent human labour, then the relations of exploitation between capitalists and workers become less relevant in explaining the survival of capital, becoming silenced as a consequence.

Prudham (2009) acknowledges the physical limits to commodification (i.e. the need of labour in the production of commodities) but provides a brief definition of commodities as ‘objects that are produced for sale’ based on Polanyi’s definition. Even though Marx and Polanyi are often used alongside one another to explain the commodification of nature, carbon trading and other payments for ecosystem service schemes (Castree, 2008; Gómez-Baggethun and Ruiz-Pérez, 2011; Kosoy and Corbera, 2010; Prudham, 2009), their conceptions of the commodity are very different. For Polanyi, land and labour are fictitious commodities because they were never produced for sale (Polanyi, 1944, pp. 75-76). On the other hand, for Marx neither land nor natural forces can be commodities since, even when they appear to have a price (as in the case of carbon credits), labour has not been spent to produce them:

‘the waterfall, like the earth in general and every natural force⁶², has no value, since

⁶² Here Marx was exclusively referring to non-human natural forces and therefore was excluding human labour in the notion of natural force.

it represents no objectified labour and hence no price, this being in the normal case nothing but value expressed in money. Where there is no value, there is *eo ipso* nothing to be expressed in money. This price is nothing but capitalized rent' (Marx 1981, p. 787).

Thus, the money that users of a waterfall pay to its "owner" does not represent the price of water, but rather a price created through the monopolisation of the portion of the land where the waterfall is located. The appropriation of ground-rent is therefore the economic form in which land property is realised (Marx, 1981, p. 772).

In order to better understand Marx's argument that prices do not represent a portion of non-human nature, it is necessary to study the commodity concept. Marx (1967, pp.131-133; 1981, p. 776) defined commodities as use-values that possess exchange-value: they have a use-value because they are useful (i.e. they fulfil certain human needs) and they have an exchange-value because they are exchangeable for other commodities and because they are values.

Marx (1967, pp. 128-129) used the term value to refer to the fact that all commodities are congealed quantities of human labour-power. The exchange-value of commodities is therefore the monetary expression of their value, that is, of the socially necessary labour-time needed to produce the commodity. From this view, even if they appear to be commodities, land, water, oxygen molecules and other non-human natural elements as well as forces cannot contribute to capital accumulation because, by not being embodied labour, they are not commodities and, therefore, they have no value. Although labour is used in some carbon offsetting projects for the reforestation work, carbon credits are not commodities because no human labour is employed in the storage of the carbon dioxide (i.e. plants store CO₂ through the photosynthesis). Therefore, nobody needs to pay for the oxygen provided by those trees and for the carbon dioxide molecules that they store because this environmental service is provided for free by nature. In other words, the price of carbon credits does not represent a certain amount of labour-time and effort. Since neither carbon credits nor emission rights are commodities, they are not accumulation strategies because they cannot directly contribute to capitalist profit (Felli, 2014).

If PES projects are not commodity production processes and carbon credits are not commodities, what is being sold in carbon markets? What does the price of carbon credits represent? Taking into consideration the ideas above, Felli (2014a) and Jones (2009) have demonstrated that carbon credits and emission rights are a price paid for the depoliticisation of the environmental problems generated through capitalist commodity production and therefore a means of avoiding the implementation of regulations around GHG emissions (Felli, 2014). More specifically, this price is a 'carbon rent' (Jones, 2009) or a 'climate rent' (Felli, 2014) because when selling carbon credits states and capitalist owners assert their ability to charge others for their right to pollute (Felli, 2014; Jones, 2009). When these actors auction emission rights, they capture rent and

when they give away these permits, they hand the rent over for nothing (Jones, 2009, p. 19). As McCarthy (2004) has noted, this appropriation and monetisation of the right to pollute by certain actors entails the privatisation of the conditions of production.

It is worth noting that the term ‘environmental rent’ could also be used to include PES schemes that serve to depoliticise the environmental problems generated through capitalist commodity production but are not necessarily related to the compensation of carbon dioxide and other GHG emissions, such as wetland mitigation banking (Robertson, 2007) and biodiversity offsets (Pawliczek and Sullivan, 2011; Sullivan, 2013). Moreover, it should be noted that even if some PES projects do not go hand in hand with the generation of carbon credits, the money paid for those projects can also be a means of depoliticising the environmental problems associated to capitalist commodity production.

Acknowledging that PES projects generate no value and hence no profit because they are not a commodity production process does not mean that terms such as ‘accumulation by conservation’, ‘accumulation by decarbonisation’ and the ‘commodification of nature’ should be thrown out. Rather, it means that such use can only account for what carbon credits and PES schemes appear to be but not for what they actually are.

In contrast to the case of forestry-related PES projects, nature-based tourism is a commodity production process. The use-values (i.e. the goods and services) that are sold to tourists are not exclusively provided by non-human nature and hence require the use of human labour (Brennan, 2001; Cabezas, 2008; Çelik and Erkus-Öztürk, 2016; Diagne, 2004; Keul, 2014; Salomon, 2009; Swanson and Timothy, 2012; Wong and Kuan, 2014). Thus, unlike in the case of carbon credits, the price of these goods and services represents a certain amount of labour-time and effort and hence, when sold, they become commodities. That is, they become use-values with an exchange-value that represents a certain amount of labour-time and effort spent in their production. The use of workers’ labour in nature-based tourism therefore differs from the use of labour in PES projects in that only in the former case can capitalists extract surplus value and hence make profit through the exploitation of labour. However, not all production in the nature-based tourism sector involves the extraction of surplus value. In some cases workers produce commodities for a capitalist who own the tourism business and extract surplus value from workers (Bianchi, 2011), whereas in other cases workers produce tourism-related commodities on their own account and appropriate the product of their labour (i.e. no surplus value is extracted) (Wong and Kuan, 2014).

Despite the different relation that nature-based tourism and PES project have with the process of capital accumulation, in both contexts workers’ labour becomes labour-power, a commodity purchased and consumed by employers according to their own needs. This means that when workers sell their labour in these contexts, employers

determine workers' labour-time and effort as well as the income that they receive from their labour (Marx, 1967, pp. 270-274).

Another commonality is the fact that in both contexts conservation NGOs and other institutional actors earn money through their involvement in the green economy may be indirectly appropriating a portion of workers' value through the funding they receive from the state for conservation project implementation. In Boko and Dioube, PES and Bintang protected area have been financed by the state directly or by bilateral development agencies that receive funding from the state. Such funding comes from the collection of taxes, which represent a portion of workers' labour-time. The money that workers use to pay taxes is based upon the expenditure of labour in productive activity. Equally, capitalists contribute to taxation with a portion of their money-capital (Jones, 2009, p. 20), which in turn represents their appropriation of workers' labour-time either through the labour process (Marx, 1967, pp. 283-491) or through the creation of monopoly rents that force workers to pay capitalists when accessing means of production and subsistence. This use of public taxes for capitalist interests (in this case profit and the depoliticisation of environmental problems generated through capitalist production) can be conceived as another form of exploitation by the capitalist state in that it is based on the appropriation of the value generated by workers and hence on their obligation to work beyond the satisfaction of their own needs (Howard, 2012, p. 321).

Taking into consideration the ideas discussed in this section, the following section analyses how, in the case of Boko and Dioube, capitalist owners of nature-based tourism businesses, institutions leading PES projects and workers in leading positions in the production hierarchy are shaping workers' experiences of the act of production in this context.

6.3. Labour exploitation in nature-based tourism and PES projects in Niomi

This section first introduces the social organisation of the nature-based tourism businesses and PES projects studied. Then it examines the relationship between the social relations of production in this green economy and working conditions in these contexts. Although this section focuses on working conditions, it discusses to some extent two other ways in which the social relations of capitalist production relate to the conditions of workers' labour, including the role of expropriations in the formation of a working class in the green economy and workers' responses to exploitation.

The social organisation of production in the green economy

The social organisation of production in nature-based tourism and mangrove reforestation PES projects studied can be mapped by identifying those individuals and

institutions purchasing workers' labour-power, those individuals selling their labour-power in these contexts and those acting as intermediaries. In addition to the actual labour process, this organisation also reflects how existing class relations and monetary inequalities are produced and reproduced through this green economy.

As discussed in chapter four, seven out of the ten nature-based tourism businesses where people from Boko and Dioube work are owned by Europeans of French and Belgian nationality, whereas the three other businesses are owned by Senegalese men (two of them are villagers from Dioube). In contrast to people hiring workers in nature-based tourism businesses and in PES projects, employees in the green economy are all Senegalese and, more specifically, people from Niomi.

Villagers' reliance on these economic activities is related to the various enclosures that have been shaping economic life in this area. Enclosures are fundamental in the creation of a sector of the population reliant on the sale of their labour-power because they separate workers from the ownership of the conditions of their labour and impose money as the main means for accessing basic needs (Marx, 1967, pp. 873-904).

Table 6.1., which focuses on those villagers who have been working regularly for nature-based tourism businesses, illustrates this idea. Those villagers who have started working for a nature-based tourism business have been expropriated in various ways. 40 per cent of villagers reliant on the sale of their labour-power in the nature-based tourism sector belong to households affected by the privatisation of the mangrove forest following the creation of the tourism-oriented protected area. All those villagers working for nature-based tourism businesses on a full-time basis come from households dependent on rain-fed agriculture and horticulture. These activities have been affected by the withdrawal of state subsidies for farming tools and inputs (Dembele, 2003; Oya and Ba, 2013) following the neoliberalisation of the state (Harvey, 2004) and by a lack of government support to improve their working conditions in this activity.

Workers characteristics	Dioube n=29	Boko n= 16	Total n=45
Male total	17 (58.6%)	13 (81.2%)	30 (66.7%)
Female total	12 (41.4%)	3 (18.7%)	15 (28.9%)
Aged above 50	0 (0%)	0 (0%)	0 (0%)
Household (hh) with net hirers of labour-power	0 (0%)	0 (0%)	0 (0%)
Member of hh affected by the privatisation of mangrove forests through the creation of the protected area	6 (20.7%)	12 (75%)	18 (40%)
Member of hh doing horticulture and/or rain-fed agriculture	29 (100%)	16 (100%)	45 (100%)
Returned migrant	14 (48.3%) (all male) 82.3% of men)	0 (0%)	14 (31.1%)

Table 6.1. Characteristics of villagers who spend most of their labour-time working for a capitalist owner in the nature-based tourism sector

Those villagers who have been producing and selling commodities to nature tourists on their own account, which include only villagers from Boko, have also been affected by enclosures. All of them belong to households that depend on farming and that have been affected by the privatisation of the mangrove forest. As noted by Kelly (2011) in her thesis of 'conservation as primitive accumulation', this case shows that there is a relationship between exclusionary conservation measures and the creation of a reserve army of labour.

As suggested in chapter five, there is a relationship between escaping from alienating conditions at work, the return to the village and the encounter of new relations of exploitation in the nature-based tourism sector. Not only do 14 per cent of those villagers working for a nature-based tourism business belong to a household with returned migrants, but also 82.3 per cent of all the returned migrants from Boko and Dioube were working in the nature-based tourism sector in 2014. This is in line with Marx's idea that capitalist commodity production processes reproduce workers' dependency on the capitalist (Marx, 1967, pp. 342-343).

As in other case studies about tourism-related work (Vandegrift, 2008), the types of work that villagers have been doing reflect existing sexual divisions of labour and gender inequalities. Women work as cooks, hotel maids and water collectors for watering plants. On the other hand, men work as builders, electricians, security guards and tour guides (most women in Boko and Dioube do not speak French).

Working conditions in nature-based tourism businesses and PES projects

Since when workers sell their labour-power those purchasing it shape the amount of time and effort that they spend on a productive activity as well as the monetary rewards they receive from their labour service, working conditions for people selling their labour in green economies need to be studied in relation to the specific needs of those purchasing it (Marx, 1967, pp. 291-293).

In commodity production processes capitalists' main need is to make profit. This need is ensured through the extraction of surplus value, which materialises in the exploitation of workers' *surplus labour* (Marx, 1967, pp. 283-491). Capitalists increase the rate of surplus value by increasing the length of the working day (absolute surplus value), by making workers produce more rapidly (i.e. making them produce more commodities while not increasing their wages) and by reducing the number of hired workers (relative surplus value), which will translate in job losses (Marx, 1967, pp. 643-654). That is, workers in these businesses need to spend more time and effort in the production of commodities than they would do if they were working for themselves and producing use-values with no exchange-value (Marx, 1967, pp. 668-672).

In Niomi, the extraction of absolute surplus value has materialised in working weeks of up to 60 hours and, in many cases, in a lack of a specific hour for the end of the working day. The working day sometimes lasted up to 12 hours when the number of customers increased. In cases where the number of paid hours has been agreed with the business owner, workers have often had to spend more hours working than verbally agreed with the employer in the first place. One villager who works for a security company hired by one of the two main hotels in the area said:

‘I often work more than the 60 hours (a week) I am expected to do but I am paid the same thing. In addition, when there are tourists arriving to the hotel at night I need to show them the room because at that time all other hotel employees have returned home, which means 30 minutes more. If I do this daily at the end of the month I have done 900 minutes (45 hours) of unpaid work’ (Interview with Isa Dianko, 24 February, 2014).

In a similar vein, a tour guide at the same hotel suggested that:

‘we often have to spend more time with the tourists than expected because the road is bad and then we lose the boat. So we spend two hours more in the visit but these are not considered when I get paid’ (Interview with Lamine Demba, 24 November, 2013).

In the oldest and largest hotels working conditions have become harder in recent years, representing what Marx (1967, pp. 429-438) identified as relative surplus value. For workers in nature-based tourism businesses this has meant the intensification of their labour-time. One of the interviewees reflected this intensification as follows:

‘the boss has ordered to make more activities within a tour of the same duration. Now in the same amount of time we do two visits instead of one as previously’ (Interview with Modou Demba, 24 November, 2013).

At the campement in Bintang protected area employers have cut labour-time at an aggregate level, decreasing the maximum number of days worked per individual from 20 to 15 days. This has meant that workers are now unable to earn more than 37,500 CFA (57.25 euros) per month as they used to. Moreover, increases in the number of customers have not been followed by increases in the number of people working at the campement. During conversations I had with cleaners they complained that most of the time they work on their own because managers only employ one cleaner instead of three even though the work load is sometimes big. Talking about the changes in the working conditions in this campement one villager from Boko said:

‘Charles [the manager who introduced the changes in working conditions] did not respect people’s work. Before him each worker used to do his own work. After that

I have seen boatmen working as cart drivers' (Interview with Jean Senghor, 19 January, 2014).

The extraction of surplus value also materialises in low wages, which allows capitalists to secure the daily reproduction of workers' bodies as well as workers' dependence on their money-capital (Marx, 1967, pp. 677-691). Despite some quantitative differences between wage rates per hour, none of the hourly wage rates of villagers working for a nature-based tourism business (of those villagers whose main economic activity is working for a nature-based tourism business) is greater than 655 CFA (1 euro) and none of them was earning more than 2500 CFA (3.8 euros) per day (if the highest monthly salary is divided) in 2013. These low wages are similar or even inferior to those of tourism workers in the *Pétite Côte* (the main touristic area in Senegal) more than ten years ago (Diagne, 2004, p. 482).

While many of the villagers have found in nature-based tourism a source of regular income, these wages do little to improve their living conditions. Most monthly wages cover only household monthly food expenses (between 33,375 CFA and 57,375 CFA (50.9 and 87.6 euros)) and almost none of them provide villagers with the ability to save money for key issues, including paying for health and school fees and farming equipment such as seeds, watering cans, seed drills, animals and transport costs to weekly markets. More than half of those working regularly in the nature-based tourism sector (15 out of 23) have children to feed and their partners have either no economic activity or do horticulture.

Although in PES projects no surplus value is extracted because no value is generated from workers' labour, hourly wage rates have also been low in the three PES projects studied, thus enabling project leaders to achieve project outcomes (i.e. the reforestation of a certain number of hectares) at the lowest possible cost. Around four or six hours planting mangrove seeds have been rewarded with 1000 CFA (1.5 euros). Four hours of mangrove seed collection have been rewarded with either 1000 or 3000 CFA (1.5 or 4.6 euros). This means that workers earned no more than 250 CFA (0.4 euros) per hour in the former activity and no more than 750 CFA (1.15 euros) in the latter. It is therefore not surprising that Senegal has been listed as the country with the lowest 'break-even price of carbon' (i.e. the one with the lowest average costs for carbon projects) (Murray et al., 2011, p. 32). Project costs are low not only due to the large mitigation potential of mangroves (Twilley et al., 1992), which are abundant in the central and southern parts of the country, but also due to the low value of Senegalese labour-power (in 2013 the minimum wage rate per hour was 182.9 CFA (0.28 euros)) (ILO, 2013, p. 17). In this sense, wages in the nature-based tourism sector and in PES projects mimic a wider trend in Senegal and, by doing so, contribute to the reproduction of poverty in the country.

As in other cases in Sub-Saharan Africa (Du Toit and Ally, 2003), capitalists in the tourism sector and local intermediaries in PES projects in Niomi have also benefited from villagers' labour-power through non-remunerated activities. The first example is

the case of Bintang protected area, where the managers offered villagers the chance to become employees (without a contract) after volunteering during the first two years of the campement. The local partner of the PES project led by Global Mangroves told villagers that they would receive their rewards from their labour in the reforestation campaigns of the first year once the project funds arrived. However, the year after, when villagers were paid for the campaigns done that year, they never received the money owed to them. Other villagers have done unpaid apprenticeships at tourism-related businesses with the hope of becoming qualified workers and in other cases villagers have not been paid the sum their employer had promised.

The regularity with which workers have received income from this green economy has also been shaped by the specific needs of those purchasing their labour-power. The frequency with which villagers have worked in this economy has not depended on their own wish to earn money, but on the type of service that was expected from them. Since PES projects are not a process where surplus value is extracted, there is no need to hire labour-power regularly. As a consequence, the maximum number of days that villagers have been able to work in PES projects has been five, which is the time required to collect mangrove seeds and plant them.

Whereas those villagers who work intermittently are employed in campements where there are no regular customers, those who are hired regularly are working in hotels where there are many visitors. Similarly, those building hotel rooms and doing electricity installations have only managed to work between one day (in the case of electricians) and three weeks (in the case of builders). On the other hand, those whose labour is constantly needed by the capitalists, as it is the case with cleaners, cooks, gardeners and tour guides, have become regular workers in nature-based tourism businesses. Moreover, although some workers are hired regularly, many of them cannot work once the tourism season is over.

The Niomi case shows that workers' experiences of the social relations of capitalist production are interconnected with other systems of social oppression (Gimenez, 2005; Guérin et al., 2012; Cross, 2013). Those purchasing labour-power often profit from workers' disadvantaged positions in existing systems of social inequalities. For example, women who were cleaning in the campement in the protected area used to be paid 2000 CFA per working day whereas the rest of the workers used to earn 2500 CFA. Talking about her working conditions in this type of "green economy", one of the young women I interviewed said that her boss fired her after she refused to have sex with him.

Resistance to poor working conditions

Despite the power that employers and intermediaries may exert on workers, some authors have suggested that employees are able to improve their working conditions to

some extent (Burawoy, 1979), while in other studies workers have had little ability to do so (Lewchuk and Robertson, 1997). Several studies have illustrated the ways in which workers creatively resist oppressive working conditions through formal as well as informal mechanisms of resistance (Böhm et al., 2008; Yücesan- Özdemir, 2003). In Niomi, many villagers have not reacted passively to the poor working conditions they have experienced while employed in the nature-based tourism sector and in PES projects. Their forms of resistance have not involved mass mobilisations and have been led by small numbers of workers or have taken place on an individual basis.

As with workers in other periods and places (Hardt and Negri, 2000, pp. 261-262), workers from Boko and Dioube have used refusal as a means of facing the social relations of capitalist production at work. In Dioube, many refused to work again for the PES project led by Global Mangroves because they were not paid during the first year of the reforestation campaigns. Another villager refused to participate in the project because he found that the planting was not well enough paid (1000 CFA (1.5 euros) per day, the money needed to cover household food expenses during a day) in comparison to the effort spent and the dangers of walking close to quicksand in the reforestation work.

In the nature-based tourism sector there are similar cases. One woman from Dioube, who worked watering the plants in Kamara's campement left her job after seeing that she was not getting paid (Interview with Awa Diallo, 5 March, 2014). In 2013 a young man living in Boko helped build the campement of Bawa association under the promise that he would be paid 6000 CFA (9.1. euros) for two weeks of full-time work. However, in the end he only received 2000 CFA (3 euros). As a result, he refused to work there again in 2014 (interview with Adama Diame, 3 February, 2014).

After complaints, guards at the protected area managed to receive a salary increase in 2014 (500 CFA or 0.8 euros more per day). Similarly, the two young women who do the cleaning at the campement in the protected area used to earn 2000 CFA (3 euros) per day. They decided to talk to the manager and ask him to increase their salary so they would earn the same amount that their colleagues were earning (2500 CFA (3.8 euros per day)). Although these villagers continued to complain about their working conditions after this change, the example shows workers' ability to improve their working conditions when acting collectively.

In contrast, some villagers criticise their working conditions, but do not express their thoughts in front of the employers. A man who works at one of the two largest hotels in the area (owned by a Belgian man) explained this response as follows:

'There are not many meetings because people are scared...they think they are going to be fired. In addition, bosses speak with the money. You go there, you tell your boss we don't have this, this and that and he corrupts you because the

money he gives you is smaller than the money he would spend on what we need’
(Interview with Abdoulaye Diata, 7 February, 2014).

Some have also argued that they do not like working there but they have little option. Thus, while keeping their jobs, some workers are thinking of migrating to find better work opportunities, especially those who do not have children. For example, soon after I left Niomi, one of the young women from Boko who was working at the campment in Bintang protected area came back to Casamance to study tourism. In addition, others have mentioned their wish to work self-employed and have more means to create their own business (some of them as eco-guides).

Working conditions in tourism-related petty commodity production and trade

Production in nature-based tourism can also be based on petty commodity production (Wong and Kuan, 2014). In Boko, tourism-related petty commodity production and petty trade have largely emerged as a result of the ‘responsible tourism project’ implemented by the Italian NGO in Boko. The NGO provided villagers with material means to keep the community-based restaurant running (cutlery, a fridge, solar panels for the fridge, a motorised boat to transport tourists to Boko), training in eco-guidance for young men and, for women, training in hospitality skills and jam making with local fruits.

Although this support was helpful in enabling villagers to start with tourism-related PCP activities, villagers’ ability to generate income through them has been limited. Since the majority of the tourists visiting Boko are paying for full board, they never consume at the community-based restaurant when visiting the village. Moreover, women’s ability to obtain a reward from the labour they invested in the production of jams and from the money they invested in the purchase of souvenirs is uncertain.

Most handicraft sellers (the handicrafts are bought from a merchant who comes to Boko and then sold to tourists) have suggested that they earn little or almost nothing. In addition, through their engagement in these activities they are using money that they could be spending in securing subsistence. They are also taking time away from other activities that are fundamental for them, including domestic tasks, mollusc collection and horticultural production.

Villagers’ difficulties to find customers have been aggravated by the fact that they lack means to allow them to promote their business, for example computers and IT skills (Cousins, 2010). As a consequence, in 2010 villagers agreed with the French owner of this business that they would cook and serve meals for its customers. Customers do not pay villagers directly because when buying their trip to Senegal, all meals are included in the package holiday. Therefore, it is the business owner who pays villagers for the meals served to customers and for the food and drinks needed to prepare each

meal. The amount he pays for each meal is three and a half times less what villagers usually ask when finding customers by themselves. Although these villagers appear to produce commodities on their own, they are in fact receiving what Marx (1967, pp. 692-693) called piece wages, which means that the business owner is extracting surplus value from them.

Some workers have used their dominant position in the organisation of the PCP enterprise to appropriate the value produced by other workers. In order to organise the management of the community-based restaurant, the Italian NGO created a community-based association and within it several posts, including a president, a treasurer and a secretary. The villagers who took these posts appropriated some of the revenues coming from the community-based restaurant and, by doing so, appropriated the value produced by other villagers who worked in the restaurant. Thus, even though they managed to find customers by themselves during a certain period, villagers earned little from the labour they spent in the restaurant. Some villagers complained and soon after the village chief invited a member of the local government to intervene in the conflict. It was collectively decided that there should be an election to choose a new president, treasurer and secretary. In September 2013 elections took place and three other villagers occupied the new posts. Although villagers never received the money that was owed to them, this example also shows the power of workers' mobilisation in shaping the social relations of production in green economies.

Intermediaries: the reproduction of class relations and exploitation

Villagers from Boko and Dioube have also seen their working conditions shaped by other villagers who have acted as intermediaries between employees and owners of nature-based tourism businesses as well as between institutions leading PES projects and villagers. In Dioube, a man employed at a small campement owned by the French multinational tourism company was put in charge of administering the division of labour and paying the other employees (although on certain occasions Dakar-based officers would pay them). He took this position to be the employee doing most of the guided tours, which paid much better than the security work. Whereas tour guides would earn 45,000 CFA (68.7 euros) a week doing tours, guards would only receive 20,000 CFA (30.5 euros) per month. A villager who worked in this campement between 2007 and 2009 said: 'in the end I was not being taken for the visits. He [the villager acting as intermediary] wanted all the tours for himself. At the beginning we would share that' (interview with Modou Ndong, 13 March 2014). Another young man who was a migrant coming from another region in Senegal, stopped receiving his salary as the villager acting as intermediary in this campement had appropriated a portion of the money he received from the company to pay the other workers. The migrant worker reported the villager to the police for selling marijuana and in October 2013 he was arrested.

Although local intermediaries cannot appropriate any value from workers in PES projects because PES schemes are not commodity production processes, they can take advantage of their position and affect villagers' working conditions in and out of the green economy. The case of the Global Mangroves PES project illustrates this idea. Kamara, who acted as local partner of the organisation, decided the amount of days that villagers could work in the project and the amount of people that were needed for the campaigns and paid villagers. It is likely that this position enabled him to appropriate revenues from the project, not only because villagers never received the payments for their work during the reforestation campaign in the first year, but also because, according to interviewees, the number of people employed in this project has been reduced every year.

Kamara has also used the livelihood activities of the project to increase his money-capital, exploiting villagers as a consequence. The first livelihood activity he included in the PES project was aimed at 'receiving support to develop local horticultural production' (in Kamara's words). This meant receiving funds from the project to buy seeds, fertilisers and farming materials and then selling them to other villagers and, consequently, indirectly appropriating a portion of the value generated by horticultural producers. The second livelihood activity was an oyster production project that he estimates will generate 83.3 million CFA (127,226.5 euros) per year. The activity is organised as a capitalist commodity production process in that Kamara plans to control the revenues generated through the work that other villagers have done (interview with Kamara, 14 March, 2014). The NGO provided the gatekeeper with funds to buy the means of production to develop this project and then villagers did the work of putting oysters in a thread and then putting the threads in 20 kilometres of mangroves. The gatekeeper also used the PES project to acquire the means of production for a honey production project that works in a similar way. Thus, while he expects to generate between 4 and 6 million CFA (interview with Kamara, 14 March, 2014), some villagers have argued that they earn little since it is Kamara who collects the revenues.

6.4. Conclusion

Looking at the case of Boko and Dioube, this chapter has studied how working conditions in nature-based tourism and in forestry-related PES projects are shaped by the social relations of production in these contexts. The chapter has located this research question within a broader context in which nature-based tourism and forestry-related PES projects are being conceived as new forms of profit-making that make labour increasingly irrelevant in the production of value and accumulation today. The chapter has brought into question this view, showing that nature-based tourism and PES projects relate to the process of capital accumulation differently: the former is a commodity production process that allows capitalists to extract surplus value from workers while the latter involves the creation of a rent that enables capitalists and states

to depoliticise the environmental and climate problems associated with capitalist commodity production. The following theoretical and political implications can be drawn from the use of this approach in the study of the Senegalese case:

First, future research on green economies will benefit from the idea that value is a monetary expression of *socially* necessary labour-time and, more broadly, from making connections between working conditions and the social relations of production in these contexts. Through this approach this chapter has shown a) how villagers' working conditions have been shaped by capitalist owners of nature-based tourism businesses, and development institutions leading PES projects; b) the ways in which the green economy in Niomi has served to perpetuate existing relations of exploitation between Europeans and Africans (Bachram, 2004; Bumpus and Liverman, 2011; Dembele, 2003; Felli, 2014; Garland, 2008); c) the role of capital's enclosures and class relations in the formation of a reserve army of labour-power for the green economy (Kelly, 2011; Marx, 1967, pp. 873-904); d) the implications of relations of exploitation in the green economy for the formation of class relations in other economic sectors.

Secondly, by paying attention to the connection between the social relations of production and villagers' working conditions in the green economy, this chapter has challenged the idea that green jobs and community-based nature-based tourism can be an opportunity for poverty reduction (UNEP, 2008, 2011). Working days in nature-based tourism businesses have been kept long and intense to facilitate the extraction of absolute and relative surplus value. Villagers' labour-time has been poorly remunerated and in some cases not remunerated, enabling capitalist profit in the production of tourism-related commodities as well as the achievement of the reforestation goal at a low cost. In addition, villagers' ability to work in the green economy has been limited by the needs of those purchasing their labour-power, leading to casual work when labour was not a means of surplus value extraction (i.e. in the case of environmental rent and the making of built-in environments for nature-based tourism businesses) and to regular work when labour was a means of surplus value extraction (i.e. in the production of tourism commodities). Similarly, villagers' ability to sell commodities on their own account has been limited by the broader organisation of tourism in the area and by their lack of means to promote their business.

Third, findings here suggest that working conditions and labour exploitation need to be understood beyond wage-labour. This should involve paying attention to various aspects of the making of the green economies, among others: the use of taxes to advance capitalist interests through green economies, the relations between local intermediaries and workers in these contexts, processes of value appropriation between workers in collective PCP enterprises, and workers' ability to sell commodities on their own account.

Finally, in order to enhance workers' lives, green economies should be based upon non-waged, non-commodified and long-lasting sources of work. More importantly, they

should be those where workers (rather than capitalists and those acting on their behalf) collectively lead decisions about the functioning of production, distribution and exchange and build relations of solidarity between them. Such change is likely to be a difficult process because it challenges capitalists' interests and because it requires a radical change at other societal levels, which highlights the role of communist⁶³, feminist, decolonial and anarchist perspectives in the making of future non-capitalist egalitarian ecologies (Barca, 2015; Barker and Pickerill, 2012; Burke and Shear, 2011; Engel-Di Mauro, 2013; Peet, 1978; Vlachou, 2005).

⁶³ Communist perspectives refer here to perspectives that emphasise life in common and look at material production in egalitarian and non-class ways, and based upon the principle of mutual aid (Graeber, 2011, pp. 95-97).

7. Disagreement and conflicts around exploitation and expropriation in green economies

7.1. Introduction

Around 3pm on the 14th of December 2013 a motorbike arrived in the village of Dioube blowing its horn. Children screamed for joy and some women asked, ‘what is going on? Electricity is back?’ The children replied, ‘no, Bouba, Bouba president!’. Boubacar, a cart driver and waiter at Keur Bintang had just become the new president of Bintang protected area management committee, replacing Abdou, whose main role had been to maintain Atlantis’ monopoly of decisions about the production of tourism services in the protected area. This change followed a long process of complaints made by villagers about the privatisation of Bintang bolong and about the working conditions in Keur Bintang.

The discontent expressed by villagers from Boko and Dioube against exploitation and expropriation in this natural sanctuary may not be a surprise for many. Scholars have long been arguing that, despite the potential of decentralised and community-based forms of forest management for improving the lives of rural people and enhancing their ability to shape forestry-related decision-making processes, there are barriers for such improvements to take place. This exclusion of the poor in forestry-related decision-making processes has been related to the differentiated ability of people to influence the institutions through which claims to access forest resources become effective (Leach et al., 1999; Ribot and Peluso, 2003; Sikor and Nguyen, 2007).

Ribot and colleagues (2008) argue that in order to reverse such inequalities around decision-making, institutions leading forestry-related projects should strengthen local democratic representation and therefore, democratise forestry management. This should involve a) choosing local partners who respond to the needs and aspirations of rural communities, b) transferring to them financial and decision-making powers and c) providing villagers with mechanisms of downwards accountability such as information, elections, monitoring and participation (Ribot et al., 2008). This framework is being used today to study forestry-related PES programmes being implemented in Sub-Saharan Africa such as REDD+ (Poteete and Ribot, 2011; Marfo et al., 2012; Ribot, 2012; Mustalahti and Rakotonarivo, 2014).

Other scholars have suggested that in order to understand environmental justices and injustices in the context of PES projects it is necessary to go beyond liberal notions of justice and pay attention to three different interrelated dimensions of justice including distribution (i.e. distributive justice), participation (i.e. procedural justice) and

recognition, which emphasise the need for these interventions to adapt to local notions of justice (He and Sikor, 2015; Martin, 2013; Martin et al., 2013, 2014; Saito-Jensen et al., 2014; Sikor et al., 2014).

While being attentive to power relations, none of these approaches consider how people's different positions in the social relations of (capitalist) production affect whose voice is represented in decision-making processes in the green economy. They do not discuss the role of workers in the creation of democratic and just green economies, nor they contemplate the possibility that justice and democracy can be improved through rejection of state policies and forestry-related projects.

On the other hand, throughout the last decade, scholars have been arguing that the creation of tourism-oriented protected areas and forestry-related PES programmes are increasingly being used as a means to advance capitalist interests by private tourism companies and conservation NGOs (Benjaminsen and Bryceson, 2012; Brockington and Scholfield, 2010; Corson, 2011; Kelly, 2011). They have also noted that through these conservation interventions, these non-state actors gain authority in forest decision-making, whereas peasants remain marginalised (Beymer-Farris and Bassett, 2012; Corson, 2011; Holmes, 2012). Despite recognising the exclusion of rural people in these processes and the rising decision-making power of conservation actors in the making of green economies, this literature has not explored the role of workers' mobilisations in these contexts.

An exception is Beymer-Farris and Bassett's study of a mangrove reforestation REDD+ project in Tanzania that turned the land used by peasants for rice cultivation into a mangrove forest (Beymer-Farris and Bassett, 2012). These authors have documented rural people's resistance actions to this project, which involved planting mangrove seedling upside down and collectively refusing to participate in the reforestation campaigns. Although brief, their documentation gives voice to the expropriated and their resistance, showing that disagreement with these interventions is a central aspect of conflicts in these contexts and that through their actions, workers defy capitalist social relations (Holloway, 2002; Dinerstein, 2015). Furthermore, it shows that the analysis of justice in forestry-related projects needs to question the interventions themselves (i.e. the social relations of production and the ecological consequences of these projects) and not just their implementation.

This chapter follows this perspective to study 'the politics of disagreement' around the project of Bintang protected area and three forestry-related PES projects where villagers from Boko and Dioube have participated. That is, it explores how workers expressed disagreement with exploitation and expropriation in these contexts as well as the ways in which actors leading these projects responded to workers' disagreement. The reason for focusing on these interventions is related to the fact that, according to the above authors, community-based forest conservation projects and forestry-related projects have the potential to improve rural people's ability to shape forestry decision-making.

The analysis of these class conflicts⁶⁴ around workers' disagreement with expropriation and exploitation draws upon the literature on workers' mobilisations introduced in chapter three which, to recapitulate: a) looks at disagreement (i.e. the rupture with the established capitalist order) as democracy, emphasising the role of workers' disagreement and search for autonomy in the production of social and environmental justice; b) suggests that workers' mobilisations are a creative process where workers' reflect their desires and hopes for a better life; c) looks at workers' mobilisations dialectically, illustrating the role of the state in the maintenance of the social relations of capitalist production through its use of repression against workers and through manufactured consent; d) highlights the centrality of labour and living conditions in workers' struggles for socio-environmental justice and democracy (Barca, 2012; Bond, 2006; Dinerstein, 2014a, 2014b; Graeber, 2001; Hardt and Negri, 2000, pp. 260-279; Rancière, 1999; Romero, 2005; Saul, 1997; Shivji, 1989, 2003; Velicu and Kaika, 2016; Wood, 1995). Taking these aspects into consideration, the next section discusses the case study. This is followed by a concluding reflection on the findings in this chapter.

7.2. Conflict and workers' disagreement with exploitation and expropriation in the green economy in Niomi

Organising production while excluding workers and manufacturing consent

Workers' disagreement with expropriation, exploitation and, more broadly, the social organisation of production is a risk to the survival of the social relations of capitalist production (Dinerstein, 2014b, 2015; Holloway, 2010). It is therefore not surprising that workers from Boko and Dioube were excluded in the decision-making processes around the creation of Bintang protected area and the mangrove reforestation PES projects implemented in Niomi.

In October 2002 Atlantis presented its project to create a community-based protected area to the local government, the sub-prefect, the regional prefect and the presidents of several community-based organisations. The protected area would preserve Bintang belong given its biodiversity (Ecoutin et al., 2011; Sow and Guillard, 2005) as well as the terrestrial forests close to it. The NGO also proposed to build a campement in the protected area that would generate revenues for local people. The idea was well-received among members of the local government and 20 out of 20 councillors voted for the creation of this new space (CRT, 2002), resulting in the approval of the creation of Bintang protected area.

⁶⁴ These conflicts are considered here class conflicts because the interventions studied seek to protect capitalists' class interests and because workers' disagreement with exploitation and expropriation plays as central role.

Several months later a decree by the Ministry of the Environment and the Ministry of Fisheries was passed confirming the creation of Bintang as a community-based protected area. The decree approved a one-year ban on natural resource extraction within 6800 hectares (RdS, 2003, Article 10). While it was approved at a higher level, the decree recognised the need for a local co-management after the one-year-ban. The decree stated that after the one-year ban the conditions of access to mangrove resources would be fixed again collectively, by the local government, the management committee, community-based organisations and a scientific expert group, leading to an ‘integrated, community-based, participatory management plan’ (RdS, 2003, Article 9). The rural council of Emssirah, the management committee as well as other community and village organisations were recognised as the decision-makers of the new conditions of access to natural resources (RdS, 2003, Article, 5).

Despite these statements, the management committee, presided by Atlantis’ local partner Abdou, was not used to discuss the relations of production in Bintang protected area. Thus, Atlantis decided on its own that villagers would be those producing the goods and services provided to tourists and that the NGO would appropriate the revenues generated through the protected area. In addition, they did not consult villagers when deciding about wage rates at the campement and the amount of villagers who were employed in the protected area.

Abdou used his position as president of the management committee to advance his own interests. He determined the per village distribution of the labour force in the protected area, favouring people from Ndiama (his village) over other ‘candidate’ workers. He chose his wife as the only shopkeeper selling products to Bintang protected area. Abdou also favoured his relatives and gave them posts of responsibility. Abdou’s brother-in-law became the manager of Keur Bintang and Abdou’s brother was chosen as staff supervisor. In addition, he installed the reception for tourists coming to the protected in area at his home in Ndiama⁶⁵ and the boat driver transporting tourists from Ndiama to Boko was also from Abdou’s village. These decisions were not taken in consultation with other villagers.

The conditions of access to Bintang bolong and the terrestrial forests in the protected area were also largely determined by Atlantis. Thus, it was finally decided that the bolong would be closed permanently. None of the villagers was ever asked whether they wanted the permanent closure of the bolong. Although there were fewer than 20 boats in the five villages closest to Bintang (among others Boko and Dioube) and only three of them were motorised, Atlantis did not differentiate between these local fishermen and other fishermen working in Bintang bolong with large nets. Thus, almost the majority of local fishermen used to fish with a hook and a thread, the possibility of allowing these types of fishing instruments as well as small-size nets was not

⁶⁵ The extent to which this was decided by Abdou on his own or in partnership with Atlantis’ members it is unknown.

contemplated by the NGO. Equally, mollusc collection did not harm biodiversity, yet it was prohibited too.

Not only were villagers excluded, they were also given the wrong information, which allowed Atlantis to avoid disagreement about the privatisation of Bintang bolong. The news about the closure of the bolong arrived through visits of the organisation and its local partner to the 14 villages in the protected area. Villagers were then told that the bolong would be closed for three months, but in the end the conservation period was extended. In one of the meetings of the management committee two fishermen from Gani suggested that they disagreed with the fact that Atlantis had not proposed an alternative date for opening the bolong. From then on, these fishermen were no longer invited to the meetings of the committee (Interview with Ansou Seidi, 3 July 2012).

The three mangrove reforestation PES projects where villagers from Boko and Dioube participated share similar characteristics. Not only did villagers have no voice in the income they earned through their work in the reforestation campaigns, but they were never asked their opinion about the land occupation that the reforestation campaigns entailed. None of the actors leading these projects asked them whether they thought the campaigns were necessary, and if so, how much should be reforested. This was despite the fact that it is they who live next to these forests and who depend on them, either directly (as in the case of fishermen and mollusc collectors) or indirectly.

None of the workers interviewed were aware that their labour in the reforestation campaigns of the carbon offset project would be used for generating carbon credits owned by a French company. This however does not correspond with the UNFCCC project document where it is stated that:

‘44 per cent of the people interviewed think that the reason why this private company finances the project is related to carbon credits or the reduction of the pollution emitted by their factories; 28 per cent think that the private company finances climate change mitigation. The local populations realize that the private company can benefit from this project because it is a profitable project for the population and for the backer’ (UNFCCC, 2010).

To be able to own carbon credits, CDM projects require validation by the UNFCCC (Yamin and Depledge, 2004). Relying on what they argue are environmental and social coherence standards, the UNFCCC validated this carbon offset project. This decision has important material, political and social implications because the approval of this pilot project has been the green light for the expansion of carbon offset projects such as these in the African continent through the creation of a global fund led by the French company leading this carbon project and by other European private companies (Livelihoods Fund, 2013).

Although some workers reacted against the uneven distribution of benefits in the PES project implemented in the local area by refusing to work (again) in them, their short

duration and the non-privatisation of mangrove forests through them, meant that PES projects did not become a site of class conflict. In contrast, Bintang protected area led to class conflicts since its creation went hand in hand with expropriations and more regular exploitation of labour-power. For this reason, the following sub-sections will concentrate on the politics around Bintang protected area.

State disengagement: the emergence and decay of workers' mobilisations

Fishermen and mollusc collectors tried to communicate their disagreement with the closure of Bintang bolong to government representatives. They visited different local authorities (including the local government, the sub-prefect and local officials from the National Fisheries service) with a petition signed by around 500 villagers from Boko, Dioube and Gani in which they said they wanted to continue fishing and collecting mollusc in the preserved bolong. Some of the mollusc collectors from Boko together with fishermen from Gani went to Fatick to talk to regional authorities. However, they were unable to gain their support. After seeing that their claims did not produce any change, villagers decided to give up their protests and started fishing and collecting molluscs in the less productive bolong next to their villages.

Villagers' decision to abandon their demands was associated with the indifference with which their claims were received and to the little expectations they have on state representatives. In the interviews and many conversations I had with working class villagers during my time in Niomi, almost all of them showed little or no trust in politicians. 'I think they do not even want us to nourish...the rural council could invest but nothing happens... we have the protected area but we have little hope that we can benefit from it' (interview with Ibou Somko, 23 February, 2014). In a conversation with a mollusc collector from Boko she also gave a similar comment referring to the local government: 'they treat us like goats, only eating *niankatan*' (the national word for plain rice) (interview with Gnima Sambou from Boko, 9 January, 2014).

In Boko and Dioube almost no family has running water as they cannot afford it. Electricity arrived to Dioube in 2012 but the rural council disconnected it after several months under the justification that other villages had priority. Four years later, the electricity has not come back yet. In Boko, electricity has become possible only through the donation of five solar panels by a French man who visits the area annually and by the Italian NGO implementing the responsible tourism project. Believing in representation from these authorities as a way for villagers to voice their needs and aspirations appears therefore paradoxical. In addition to the local government, local state bureaucracies in charge of forest management and conservation did not develop a good relationship with the local population. The following quote by a fisherman from Gani describes how these feelings towards local state bureaucracies involved in forest management were formed:

They [the National Parks service] were never present, we have never seen them...they never had meetings with people and should do things for the people. For us they are not our enemies, but they have become so..., they should be there for the population and not only for the project⁶⁶ (interview with fisherman from Gani, June, 15 July 2012).

A former officer of the National Parks service justified their distance towards local populations due to the principles of the bureaucracy to which they belong:

‘We obey our superiors and we do not do anything without informing them, it is the military command...we are allocated somewhere else so we do not get too familiar with the local population, that’s the management approach’ (interview with local official, 27 July, 2012).

Avoiding disagreement through state repression

Due to its potential in preventing and repressing disagreement, the repressive apparatus of the state (laws, police, prisons and army) is often used to defend capitalist interests (Wood, 1995). As the case of Bintang protected area shows, working class villagers living in Niomi have encountered the state not only through its disengagement with their problems, but also through its use of repression. Such repression was aimed at avoiding contestation of Atlantis’ private property of the mangrove and terrestrial forests in Bintang as well as contestation of its ability to exploit villagers’ labour-power. The following examples of state cooperation with Atlantis’ interests through the use of its repressive apparatus illustrate how the social injustices in forestry projects are not simply related to capitalists’ strategies to make profit, but to the nature of the state, to a lack of respect for working class people and to the alienation of humans from other humans in capitalist, state-governed societies (Barca, 2015; Marx, 1959).

Villagers’ first experience of being intimidated by state agencies in relation to Bintang protected area came soon after the three-month conservation period announced by Atlantis. A fisherman from Gani described to me what happened to him and two other fishermen as they were coming back from fishing in Bintang bolong:

‘An armed man found us in Boko [fishermen were about to go back to Gani after having been fishing in Bintang bolong]. He shot in the air and said that if we ran he would shoot us. He had a rope that he wanted to use to tie us up. I said I wasn’t a slave and then he hit me with his weapon. We were sent to Fatick [where the prison is] and then were released after Ali Haidar [Atlantis’ co-manager] paid. He came to our village to say sorry together with his lawyer and an agent from the National Parks service. The

⁶⁶ Project is the word that villagers use to refer to the institutions leading the project as often they do not interact with the organisation and do not remember which organisation is behind which project, especially in Dioube where more projects are being implemented.

lawyer said that if we would do it again we would spend six months in prison' (local fisherman, 10 July, 2012).

Despite Atlantis managers' apologies, repression towards villagers continued. Several years after this incident a young man from Boko saw two agents from the Forestry Service coming towards his house. He asked them why they were there and the officers asked him where the rifle he kept from his days in the army service was. They told him he was a poacher and accused him of hunting in the forests of Bintang protected area. The officers started struggling with the man until he escaped. Then, they shot in the air several times. The young man came back to where the officers were after he said to himself that he had not done anything bad and therefore he did not need to run. The officers then handcuffed him and took him to Abdou's house, where he gave the officers a piece of paper⁶⁷. The man was sent to the prison in Fatick, where he stayed two days until his father paid a fine of 200,000 CFA (305.3 euros) to free him.

This young man, whose mother was a mollusc collector and whose girlfriend was a cleaner in the campement in the protected area, related this incident to his complaints about the private appropriation by Atlantis of the community-based protected area in front of Abdou (interview with Antoine Diata, 23 January 2014). In other words, he interpreted the green pretext used for his arrest as a way to avoid disagreement with Atlantis' monopolisation of decision-making around the protected area.

As in the case of conservation rules, some villagers complained about what they considered Atlantis' appropriation of the money generated in the campement, but again, they were punished for doing so. Boubacar and a villager from Gani employed as tour guide complained about Atlantis' appropriation of the revenues generated through Bintang campement. They wrote a letter complaining about their working conditions there. On not receiving responses from state actors and seeing the large amount of money coming to the till and then disappearing, one day (in 2011) they took a large sum of money from the till and threatened the managers that they would not give back the money if there were not improvements in the redistribution of money generated through the campement. Abdou fired these workers with authorisation from the local sub-prefecture. They lost their work for nine months (both of them have children to maintain).

In November 2013, a female petty trader came to Niomi looking for some ditakh, which can be collected in the forests in the protected area. Since Boko is on an island 25 minutes away from continental land, she asked a young man from Abdou's village if he could transport her the fruit. The man, who was employed as a boatman by Atlantis, made an expensive offer. The woman ended up paying a young villager from Boko for the transport since he had made a cheaper offer. Several days after the fruit was collected, officers from the National Parks service went to Boko and caught the young

⁶⁷ The interviewee did not know what was written on that piece of paper.

man, asking him for 400,000 CFA (610 euros) if he wanted to have his boat back (the boat belonged to a French man living in the area). They argued that the reason was that fruit collection required the payment of a permit to the Forestry Service and the woman had not paid that. The boatman had used this legal flow to take his revenge on the man from Boko by informing the officers. The villager had to find among his relatives the lump sum and give it to the Forestry Service. This example illustrates the unequal treatment that workers and capitalists receive from the state in Niomi. Not only is 400,000 CFA a sum of money that none of the working class villagers from Boko and Dioube own, it is also the annual fee that hotels organising hunting tours in the area pay to the Forestry Service for their use of the forests.

The week after this incident happened, as I was doing my fieldwork there, ten agents from the Forestry Service wearing their military uniforms arrived unexpectedly in Boko and crossed the village running and, holding their rifles, they shot into the air several times. Many realised the message that was being sent to them: ‘now it’s not only the bolong, but also the forest’, said a young woman from Boko as she saw the officers (Binta Sambou, 13 February, 2014).

Unlike the case of the land expropriation by an Italian biodiesel company in the Senegal river valley (Koopman, 2012) and that of urban protests against the re-election of Abdoulaye Wade in 2011-2012, villagers’ experiences of expropriation, exploitation and state repression in this context are unknown beyond the local area. Even more, one of Atlantis’ co-leaders has become a well-known environmentalist in the media and became the Minister of the Environment in 2012.

Inter-capitalist competition as opportunity: the departure of Atlantis

Part of the study of the making of social justice and injustices involves looking at the processes through which workers struggle to make their sufferings visible (Barca, 2014; Velicu and Kaika, 2016). This section discusses this aspect by looking at the case of Bintang protected area.

Although seemingly paradoxical, inter-capitalist struggles around Bintang protected benefited workers and allowed them to make their complaints against exploitation and expropriation visible. At the same time, capitalists used employees’ problems to advance their class interests. The capitalists we refer to here are not private companies, but members of the rural council who sought to appropriate a portion of the surplus value extracted by Atlantis from workers and to increase their control of the money generated through Bintang. In 2012 they created a tax through which the NGO would pay the rural council a portion of the revenues collected from the campement and the fees paid for the entrance to the protected area. To achieve this objective rural councillors put in place a strategy that the current local councillor responsible for the environment described to me as follows:

‘I will tell you how they [Atlantis] started involving us in their decisions. We started getting in contact with all the different campements within the area, but we didn’t go to the one in Bintang. We did this deliberately. Abdou was upset that we didn’t go to visit him and he invited us to one of their general assemblies’ (interview with rural councillor, 15th July 2012).

Workers took this presence in the general assembly as an opportunity to raise again the problems they were experiencing in the campement:

...the young employees revolted in front of us at the meeting and talked about the problems there, about the low salaries, they argued that only one family was leading Bintang [Abdou’s family]’ (Interview with rural councillor, 15th July 2012).

Soon after this, the rural council started charging Atlantis a 300,000 CFA (458 euros) annual rental tax for the use of land in Bintang⁶⁸, but this created a new conflict as Atlantis’ officers and Abdou saw this tax as an appropriation (interview with Atlantis’ local partner, 12 April, 2012).

During a visit by a conservation NGO acting as intermediary organisation between the donor agency and Atlantis, the rural councillor in charge of development projects had a conversation with one of the managers of this organisation about Atlantis’ monopoly of the revenues generated in Bintang. He informed the project manager about the appropriations by Abdou and his relatives and told her that local populations were not benefiting from the protected area (interview with rural councillor, 2 November, 2013). The councillor providing this information was Kamara, the partner of the Global Mangroves PES project and the person controlling the land in the AMI horticultural project. He is the only non-worker living in Dioube and a capitalist-in-the-making. As shown below, despite his advocacy of workers’ interests, his support was part of his strategy to control the revenues generated through the protected area.

After this conversation, the officer from the intermediary organisation sent a legal expert to the field to analyse the juridical status of Bintang as well as its socio-economic effects on villagers. The consultant, who listened to the complaints by several rural councillors and members of the management committee, suggested that the local government should be allowed to collect one third of the revenues coming from the protected area, Abdou should leave his post as president of the management committee, his brother, who was the manager of the campement, should be replaced and members within the management committee should be renewed every two years. He also suggested that Atlantis could continue leading the management of the protected area (Kante, 2012). The consultant did not propose any alternative to the class relations in Keur Bintang.

⁶⁸ While this tax could be interpreted as a source of development it did not challenge the relations of production and led to a form of surplus value appropriation by landlords (in this case, the state).

After this there was a call for elections for choosing the new president of the management committee. As the pre-election and post-election process here described suggests, the community-based aspect of the protected area (and therefore the ambiguous property of the campement in it) was both an opportunity for workers and for local capitalists. One of the two candidates from Dioube was Kamara. His attempt to be a candidate was unsuccessful since the sub-prefect, who was playing the referee role in the elections, told him he could not become president of the management committee because he was a rural councillor. Then, a fisherman from Gani who had become in the last few years Kamara's right hand by helping him in the implementation of several development projects in the area presented his candidature. However, he finally decided to not participate as candidate. The reason was that villagers from Marang, Bukarah, Gani, Dioube and Boko participating in the elections realised that it would be better to vote in coalition for a common candidate rather than to compete between them. This candidate was Boubacar, the villager from Dioube who had been fired from Keur Bintang after taking money from the till. The coalition was effective even though Abdou's right hand ran as candidate and Abdou offered 4000 and 8000 CFA to some villagers from Bukarah and Boko participating in the voting in exchange for electing him. Boubacar won the elections.

Because Boubacar was a worker in the protected area, a former fisherman, a farmer and an illiterate person despite being able to speak French, his victory is, at least, symbolically subversive as it took place in a context where rural populations such as those in Boko and Dioube are being constantly marginalised in decision-making processes and mistreated. It is also unique as being the local partner of development projects (and therefore finding a fast route out of poverty) has become conditional upon speaking good French and being able to write reports on a computer. One farmer from Dioube summarised this new political economy as follows:

'projects are good but for those who hold a diploma...since Wade-the last Senegalese president before current president Macky Sall- those who hold a diploma are those who are well-off' (Issa Demba, 2 March, 2014).

In addition to the fact that Boubacar was a worker, all the members of the new management committee of the protected area were working class people. More importantly, the new members came from families reliant on fishing, mollusc collection and on employment in the campement in the protected area. These included the villager who was arrested and accused of hunting in the protected forests, the villager from Gani who lost his job after having revolted with Boubacar, a young fisherman from a family of fishermen and mollusc collectors in Boko, a fisherman from Gani, a male mollusc collector from Sangako, a young villager from Marang and a female mollusc collector from Gani who is working with the National Parks Service. Conscious of the patronage Abdou exerted within his village, Boubacar decided to avoid villagers from Ndiama when forming the management committee and only chose five villages that allied

themselves during the elections. Unfortunately, only one woman was part of the committee and none of the mollusc collectors directly affected by the closure of the bolong became part of the committee.

Possibilities and impossibilities of autonomy in a class context

How did workers (in particular, fishermen, mollusc collectors and workers in the protected area) use their role as decision-makers in the management committee to improve their living conditions? How did they manage to gain autonomy from the actors that were oppressing them? As suggested by other authors, in Niomi workers used their role as decision-makers creatively, imagining a different order around the protected area (Dinerstein, 2014b, 2015; Hardt and Negri, 2000). However, as this section shows, they only managed to gain autonomy partly as their desires for change were limited by Kamara's attempts to appropriate the protected area and by state domination.

Members of the new management committee knew that the starting point for reversing the situation of exploitation and expropriation they were facing involved reducing as much as possible Atlantis and Abdou's control of decision-making. To do this they started by shifting the location of the welcoming house and of the boat for transporting tourists from Ndiama (Abdou's village) to Dioube (Boubacar's village). This involved two main tasks. First, going to Ndiama to recover some materials of the campement located at Abdou's house as well as the boat used to transport tourists to Bintang and, second, shifting the welcoming house from Abdou's house in Ndiama to Dioube. Boubacar did not do this on his own, as villagers collaborated in the process. A family from the village lent their land for the construction of the welcoming house. In addition, every Sunday since mid February until the end of March around 20 young working class men⁶⁹ from Dioube got together to build the new welcoming house of Bintang in their village, as described in chapter five.

The first tasks of the committee had positive effects. After two months of the elections, tourists staying at Keur Bintang were already going to Dioube instead of Ndiama to take the boat to cross to Boko. Atlantis' local partners had already given back the material of the campement to the new management committee, which had also managed to gain access to the bank account where the eight million CFA were, and the hotel manager had started giving the revenues of the campement to him. The boatman from Ndiama who had participated in denouncing the villager collecting fruit from the forests quitted his job arguing that Dioube was too far. To replace him, Boubacar chose an unemployed man from Dioube who was also a returned migrant and a former fisherman who quitted this activity after the closure of Bintang bolong. Another unemployed man

⁶⁹ They were only working class men in that Kamara, the only non-worker in the village, did not participate in these sessions.

from Dioube was hired as a guard for the welcoming house. Moreover, Boubacar placed particular importance on villagers' equal opportunity to work. Rather than choosing one or two moto-taxi drivers as responsible for this, he created a system where young men who work self-employed as moto-taxi drivers and often do not have enough customers would divide the work to transport tourists and their luggage from Emsirah to Dioube.

Despite these significant improvements, class relations survived. Boubacar quitted his job as cart driver and became in charge of attending meetings and taking care of this transition. Workers in the campement did not gain control of the revenues they generated through their labour at the campement and conservation rules did not change. Moreover, as the following example suggests, Atlantis' officers, state officers and local capitalists (especially Kamara) kept on trying to maintain and gain control of the protected area. Given that the state still regulates access in the forests, workers could not take decisions about these issues on their own and a meeting was organised at the rural council. In it, members of the management committee had to hear the proposals for the management of the protected area made by Atlantis, the Forestry and National Parks services.

The day before, the management committee met to prepare. This was an opportunity for workers to talk about the issues that concerned them and their relatives, showing that, as Barca (2012) notes, the labour process is a fundamental side of politics. The vice-president of the committee, whose girlfriend works in Bintang as a cleaner and whose mother was a mollusc collector, argued that employees should have contract, that there should be an time limit for the working day, salaries should increase and that the labour force coming from each village should be evenly distributed. He added that there should be changes in the regulation of natural resource extraction both in the bolong and in the terrestrial forest located in Bintang. The villager from Gani who was fired after complaining to Boubacar about the working conditions at the campement, focused his intervention to talk about the implications of the protected area for villagers' working and living conditions: 'the working day (at the campement) is too long, we need to respect people's work...the 14 villages of Niomi do not see their interest in Bintang'. Soon after this conversation, Boubacar increased the guards' wages. The fisherman from Boko whose sisters and sisters-in-law are mollusc collectors said: 'we are too tired, what they said is different than what they did, that is why the bolong is now closed'. He also subtly criticised the ignorance of the NGO with regards to the management of the mangrove forest in that they banned mollusc collection while not being a threat to biodiversity conservation. 'We know the bolong, there is no development in relation to oysters, cockles, seashells [meaning it is not good to leave the molluscs without collecting them]...to know how we use the bolong we need to know it'. A female mollusc collector from Gani who had started working with the National Parks Service agreed with him and said, 'what we don't want is that the officers from the National Parks Service marinate the molluscs and eat them!' Finally, Boubacar spoke and said: 'they [Atlantis] have walked on our backs (a Senegalese figurative expression meaning they have abused us), we are tired'. Boubacar, who, as

many other villagers, saw this change as an opportunity for improving villagers' living conditions, argued that in addition to visits to the campement, tours around other villages in the area such as Dioube, Bukarah and Missirah could be organised for tourists coming to the protected area. He also reminded the others of the need to remove Atlantis members from the management of the campement in Bintang and that for this it would be necessary to prevent the manager of the campement from appropriating the revenues and sending them to Atlantis.

Despite discussion on labour issues the previous day, the need to meet with state authorities and Atlantis brought workers' problems to the bottom of the agenda. Instead, the main focus of the meeting became Atlantis' dominant role in the management of the protected area. Atlantis members presented their proposal for Bintang management plan, showing their resistance to leave their class position. They stressed that the new management committee should work with them and that the NGO should manage the centre receiving tourist visits from schools and high schools. They also suggested that Atlantis could collect fines from those not respecting conservation rules. All participants in the meetings contested these proposals and suggested in one way or another that Atlantis' control of the revenues coming from the protected area should end. An officer from the Forestry Service said 'you said you are a conservation organisation, then why are you talking all the time about the money, the money?' Another villager accused the NGO of using their name (that is, the 'community-based' prefix) to get funding. In response to these and other criticisms by participants in the meeting, one of Atlantis' representatives said 'we should not be the cow to be sacrificed'.

Although this unanimous rejection of Atlantis appeared as a fundamental step in the process of workers' emancipation, the meeting did not have positive effects in questioning the expropriation of villagers from the *bolong* and the exploitation of workers in the campement. The possibility of allowing small size nets in the protected *bolong* was not discussed. Moreover, while participants acknowledged that mollusc and fruit collection were not harmful and should be allowed, officers from the Forestry Service used these regulations as a means of appropriating the product of workers' labour and centralising the control of production in the hands of those who do not work there. An officer from the Forestry Service said: 'the way exploitation of fruits was being done was not appropriate'. People used to pay 1500 CFA to villagers and then go and collect. We should do a warehouse'.

The survival of class relations in Bintang was not only influenced by state officers' attempts to appropriate the product of workers' labour. The presence of Kamara in the meetings of the management committee and his eloquence to defend the interests of capital became a new barrier for the liberation of workers. A few days after the meeting at the rural council, the management committee met again, this time to discuss the management of the campement and therefore working conditions there. Kamara, who took a protagonic role in the meeting, suggested that 'efficiency is the end' and that

salaries and revenues (which he identified as costs and benefits respectively) should be counted. He also argued that employees should continue working a maximum of 15 days (the former Atlantis manager had reduced the amount of working days per month from 20 to 15) because the budget for the campement was unknown. This fear generation about the dangers of the survival of the protected area were effective. From then on the discussion centred around counting villagers' salaries as part of the expenses of the campement and it was concluded that, for the campement to survive and to save money for its maintenance, workers should keep earning the 2500 CFA (3.8 euros) daily wage. It is unknown why Boubacar allowed this, but despite playing a crucial role in Atlantis' departure, he did not oppose such proposal and workers' conditions continued to be the same.

In phone calls I had with villagers in 2016 after the completion of fieldwork for this research I was informed that, unsurprisingly, Kamara became the president of the management committee (i.e. he is in control of the production process) after the termination of Boubacar's two-year period as president of the management committee. Boubacar returned to his job as a cart driver but remained part of the management committee. In addition, the conservation rules that Atlantis put in place have not changed as there is still resistance from the state to modify them. Thus, although Atlantis had left the protected area after villagers' long struggle, the class relations that enabled non-workers to exploit employees in the campement survived. This suggests that villagers' complaints became silenced again. However, this does not need to be the end of the story. It is likely that the continuation of workers' exploitation and the extension of the conservation period will lead to more contestation as villagers try to improve their living conditions, but it is also likely that migration and finding new economic activities will become an exit to these problems. For example, after I completed my fieldwork, one of the villagers from Boko who was working as a hotel maid in Bintang came back to her region, arguing that she wanted to improve her living conditions and could not do it by working there. Moreover, if the campement in the protected area continues to be a source of profit it is likely that other actors will continue their struggles to appropriate a portion of the surplus value generated by workers there.

7.3. Conclusion

This chapter has studied the relationship between workers' mobilisations against expropriation and exploitation in Bintang protected area and forestry-related PES projects in Niomi and the ways in which institutions leading these interventions avoided such disagreement. The chapter has demonstrated that in order to maintain their ability to control production in these contexts, actors leading these interventions have put in place a wide range of mechanisms to prevent and repress workers' disagreement. This has materialised in a failure to ask villagers about their opinion with regards to conservation rules, land occupation through PES project implementation and working

conditions in the green economy. In other cases it has materialised as a response to workers' mobilisations and disobedience with the conservation rules, leading to fines, arrests and threats of violence by the army.

Villagers have not reacted passively, but state disengagement and indifference towards their problems led most of them to abandon their demands. State actors' attempts to appropriate a portion of the value produced through villagers' work in the campement in Bintang became, paradoxically, an opportunity for workers to make their problems visible. Such visibility together with this inter-capitalist struggle forced the departure of Atlantis. From then on, a process of hope developed where villagers acted as creators in decision-making around Bintang protected area. However, despite Atlantis' departure, such process of hope did not last long and did not go hand in hand with a full transformation of the social relations enabling exploitation and expropriation in Bintang, partly due to workers' positions and partly due to state officers' continuous dominant position as well as Kamara's attempts to control Bintang. The process mapped here has the following theoretical and political implications:

First, the study of social justice and democracy in forestry-related projects needs to go hand in hand with an analysis of the social relations of production in the context studied and therefore within the projects that are being analysed. Thus, although scholars are right in emphasising the distributional aspects of social justice and democracy, these concepts gain meaning if studied in connexion to the social relations of production in the context studied (i.e. who appropriates the land, who purchases labour power, for what purpose, who provides the labour service, who appropriates the product of workers' labour and what is expected in return from labour services) (Felli, 2014b). As this case has demonstrated, disagreement and avoidance of disagreement are central elements in the processes through which class relations are formed, reproduced and challenged (Dinerstein, 2014a, 2014b).

Secondly, although the formation of hegemonies in green capitalist economies is important in analysing how green economies are socially-produced (Goodman and Salleh, 2013; Igoe et al., 2010), this case emphasises the importance of workers' search for autonomy from these hegemonies in the dynamics of green capitalist economies. Such a search, the Niomi case suggests, does not only manifest in actions of disobedience, but in the imagination of better realities in which improvements in the conditions of workers' labour and, more generally, in their living conditions occupy a central position (Barca, 2012; Shivji, 2003). Autonomy, hope, labour and workers' struggles against expropriation, exploitation and class relations are therefore crucial elements in the construction of fairer societies (Rancière in Blechman et al., 2005; Velicu and Kaika, 2016) and in the making of fairer green economies.

Third, the oppression that villagers have experienced beyond the labour process and their loss of access to natural resources emphasise the idea defended by scholars that social injustices in capitalist societies are a reflection of the alienation of human

relations due to the prioritisation of money over solidarity and care for other sentient beings (Holloway, 2002; Marx, 1959). As the Niomi case suggests, looking at this alienation beyond a simple dichotomy of capitalists (private companies) versus workers producing commodities for them is helpful in that it enables researchers to see how various actors undermine workers' struggles to liberate themselves from expropriation and exploitation. As the example of the boatman suggests, such perspectives can also show the ways in which the growing power of money and the subsequent fetishisation of human relations negatively affect workers' cohesion in their search for justice (Holloway, 2002).

Finally, looking at the dynamics of disagreement about exploitation and expropriation and hence at the possibilities and impossibilities of autonomy (Böhm et al., 2010) can enable researchers and socially-committed individuals outside academia to expose workers' vulnerability in contexts of on-going resistance from capitalists, state authorities and others acting on their behalf (Barca, 2014; Velicu and Kaika, 2016). In contrast, looking at workers' dreams and creations of autonomous green economies and relations of solidarity in these contexts can also expose workers' strengths in such contexts (Dinerstein, 2014a).

8. Conclusion

8.1. Introduction

This chapter serves as reflection of the main findings of this thesis. The first section recapitulates the main aims of the thesis and the conclusions of each of the empirical chapters focused on the green economy. The second section assembles these findings, reflecting on the theoretical and methodological implications of this case study. The last section concludes with a discussion of the implications of this thesis for future research and for social change in the context of transitions to green economies.

8.2. Recapitulating findings

This thesis was aimed at exploring the history of green capitalist economies through the perspectives of workers. To do so it has focused on labour since it is a fundamental part of workers' lives and since it reflects social as well as ecological relations. Looking at the case of Boko and Dioube, the thesis has studied changes in the conditions of workers' labour in relation to the processes through which the social relations of production in nature-based tourism and payment for ecosystem service projects have emerged, survived and been challenged. This research question has been contextualised through two chapters (two and four) that have shown the growing relevance of the social relations of capitalist production, globally, in Senegal and in the villages studied, leading to a wide range of rural transformations. Then, drawing on Marx's ideas of the social relations of capitalist production discussed in chapter three, it has divided the research question of this thesis into three research sub-questions, each of which has investigated one aspect of the social relations of production that was relevant in the context studied.

Chapter five has analysed fishermen's and mollusc collectors' experiences of and responses to primitive accumulation through the privatisation of 1800 hectares of mangrove forest following the creation of Bintang tourism-oriented protected area (RSQ1). It has addressed this question by situating it within a broader context where other capital's enclosures (in particular, neoliberal state policies) and the expansion of capital in Boko and Dioube have been shaping the conditions of villagers' labour. The chapter has illustrated a process of depeasantisation, migration, multiplication of petty commodity production activities, proletarianisation and spatial transformations in the two villages studied. The chapter has argued that these agrarian changes, which have already been noticed by scholars, have a deeper implication. They suggest that workers experience primitive accumulation as an ongoing process of alienation whereby they are continuously separated from the conditions of their labour in the process of adapting to capital's enclosures and to the subsequent power of capital in their society. The chapter

has also illustrated that, despite not being a conscious decision by capitalist owners, alienation is functional to capital accumulation. As workers adapt to enclosures they re-encounter the power of capital through consumption and production, contributing to its survival in the process. Finally, the chapter has argued that the role of workers' agency in primitive accumulation makes it an unpredictable and context-specific process.

Chapter six has studied the ways in which villagers' working conditions in the nature-based tourism sector and in forestry-related PES projects in Niomi have been shaped by the social organisation of the labour process in these contexts (RSQ2). Drawing on Marx's notions of the commodity value as a monetary expression of socially necessary labour-time (Marx, 1967), it has brought into question the view that nature-based tourism and forestry-related PES projects are an indication of the commodity value in non-human nature and of the diminishing importance of labour in capital accumulation processes. The chapter has distinguished between nature-based tourism and forestry-related PES projects, suggesting that only the former is a commodity production process generating value and hence potentially profit through the use of workers' labour. Paying attention to these issues, it has shown that capitalists have shaped villagers' working conditions in nature-based tourism and forestry-related PES projects, alienating them from the act of producing. In Niomi, villagers' working days in nature-based tourism businesses have been kept long and intense to facilitate the extraction of absolute and relative surplus value. In addition, the activities that workers have performed have been poorly remunerated (and in some cases not remunerated) in order to ensure profit in nature-based tourism businesses as well as the achievement of a project outcome at low cost. The chapter has also emphasised the need to analyse working conditions in green capitalist economies beyond the wage-labourer capitalist relationship, integrating petty commodity production as well as hierarchical relations between workers around the labour process. Finally, findings in this chapter have emphasised the role of trans-sectorial perspectives in the study of green economies that illustrate the ways in which gatekeeping is used as a means of accumulation in other sectors of the economy as well as the relationship between the composition of the working class in the green economy and the agrarian crises experienced by villagers.

Chapter seven has studied how workers' disagreement with exploitation and expropriation in the green economy has been shaped by the ways in which actors leading nature-based tourism and forestry-related PES projects have avoided such disagreement (RSQ3). The chapter has emphasised the need to integrate the social relations of production as well as workers' attempts to defend their living and labour conditions in the study of social justice and democracy in nature-based tourism and forestry-related PES projects. In Niomi those controlling money in this green economies have avoided workers' disagreement with exploitation and appropriation in order to maintain a specific organisation of production that enables them to advance their capitalist interests. Such avoidance has materialised in a lack of dialogue with workers about the social relations of production in these contexts and in the use of the repressive apparatus of the state as a means of ending workers' contestation. The disengagement of

the neoliberal Senegalese state with workers' problems has pushed some villagers to abandon their complaints. At the same time, state officers' attempts to extract a portion of the surplus value generated at Keur Bintang and the subsequent tension with Atlantis has been an opportunity for workers to make their problems visible. Finally, the chapter has suggested that disagreement goes hand in hand with creative processes of hope centred around the improvement of villagers' working and living conditions, but that the process of emancipation can be in turn coopted by hegemonic agents. In this sense, workers' expressions of disagreement materialise in possibilities and impossibilities of autonomy (Böhm et al., 2010).

8.3. Assembling findings

Based on the above findings, I reflect here on the theoretical, methodological and political implications of this thesis for future research on green economies and on capitalist development more generally.

Looking at emerging green economies through a focus on labour and the lenses of Marx's critique: a different story

After Marx developed his ideas, a new history of industrialisation and capitalist production was written. Capital was no longer seen as a provider of human needs and progress. It was a social relation based upon non-workers' exploitation and appropriation of workers' labour that enabled the production of the use-values symbolising such progress. Marx's critique of political economy visibilised the oppression of the working class in capitalist societies as well as the ways in which such oppression, through non-workers' exploitation and expropriation of workers, was the basis of capitalist development.

In recent years multilateral development institutions and large conservation organisations have been promoting nature-based tourism and forestry-related PES projects as a means of saving nature (UNEP, 2008, 2011). An emerging literature has been analysing these developments, arguing that they constitute a means for advancing capitalist interests. This strand of the literature has mainly focused on the performance of high-level actors such as private companies, conservation NGOs and multilateral as well as bilateral development agencies (Brockington, 2012; Brockington and Scholfield, 2010; Corson, 2010; Igoe et al., 2010), on providing critiques of capitalists' use of green economies as fixes for capital's environmental problems (Büscher et al., 2012; Neves, 2010; Sullivan, 2013) and on conceptualising the growing use of money as a means for saving nature (Büscher, 2013; Büscher and Igoe, 2013; Büscher and Fletcher, 2015). However, these authors have hardly investigated workers' experiences of and responses to the development of green capitalist economies. This thesis has attempted to fill this gap by studying changes in the conditions of workers' labour in relation to the

emergence and survival of the social relations of production in nature-based tourism and forestry-related PES projects in Niomi. Drawing on Marx's critique of political economy to examine this question, the thesis has told a different story about these economies, contributing to several strands of the literature, including: the political economy of agrarian change literature, the 'land grabbing' literature, the literature discussing the use of environmental conservation for the pursuit of capitalist interests, the political ecology literature discussing the neoliberalisation of environmental management and the natural resource governance literature exploring the social justice dimensions of forestry projects.

Firstly, in line with Kelly (2011), the thesis has shown that conservation practice can be a mechanism of primitive accumulation. The restrictions in natural resource access following the creation of tourism-oriented protected areas are not only a means of nature preservation (Fairhead et al., 2012). They are also an expropriation through which non-workers privatise the conditions of production, turning forests into a space exclusively used for tourism purposes. Such expropriation, the thesis shows, benefits capitalist owners by contributing to the creation of a reserve army of labour. However, in contrast to recent research on large-scale land expropriations (Adnan, 2013; Levien, 2012), this thesis suggests that the importance of primitive accumulation as a concept is political, particularly its role in exposing how the creation of capitalist property is inseparable from the alienation of workers from the conditions of their labour. The question when using this concept is therefore not to determine what enables capital accumulation, but rather, to expose the violent history of the social relations of capitalist production. Thus, land enclosures in the context of nature-based tourism are a mechanism of primitive accumulation, but this is not because they entail a transition from a non-capitalist to a capitalist economy by turning peasants into landless wage-labourers or because they involve the use of 'extra-economic' force (Adnan, 2013; Levien, 2012). They are a mechanism of primitive accumulation because they force workers to lose ownership of the conditions of their labour (Marx, 1967).

Secondly, in common with previous research on the agrarian implications of enclosures and capitalist development (Akram-Lodhi, 2007; Araghi, 1990; Arrighi, 1970; Baird, 2011; Cáceres, 20015; Cross, 2013), the Niomi case suggests that primitive accumulation goes hand in hand with a wide range of agrarian transformations. What this case adds to this literature is the recognition that workers' alienation and their actions to cope with the alienation of their labour are a central aspect in the agrarian transformations that go hand in hand with large-scale land expropriations and, more broadly, primitive accumulation. These findings contrast with the view in land grabbing research that 'the more adaptive peasant responses lead to more advantageous positions of their households in rural communities' (Mamonova, 2015, p. 628). It is worth noting that by arguing that workers experience the expansion of capital in Boko and Dioube as a loss of ownership from the conditions of their labour the research is not idealising the past in these villages. Instead, it is a way of arguing that the changes that have gone hand in hand with the penetration of capital in Niomi have been alienating for villagers

in various ways and that therefore they have not contributed to improve their living conditions.

Third, findings here have brought into question recent conceptualisations of nature-based tourism and forestry-related PES projects as ways of profit-making through the commodification of non-human nature and prosumption by ecotourists (Büscher and Igoe 2013; Fletcher and Neves, 2012). In contrast to this view and the argument that nature-based tourism and PES projects indicate the growing irrelevance of labour in the generation of value in contemporary capitalist economies (Büscher, 2013; Büscher and Fletcher, 2015), this thesis shows that labour is fundamental in the production of the goods and services sold to tourists and in the reforestation work in PES projects. By looking at value as a representation of socially-necessary labour-time, the thesis has distinguished between the labour used in the context of nature-based tourism and in forestry-related PES projects. Although in some PES projects labour is used for the reforestation work, such labour does not contribute to the generation of capitalist profit because PES projects are not commodity production processes. The environmental services generated through these interventions are provided for free by nature and therefore they do not need to be purchased. Therefore, the price paid for the implementation of PES projects and for the purchase of carbon credits is not the price of non-human nature turned into a commodity. Instead, it is a climate/carbon/environmental rent paid for the depoliticisation of the environmental problems associated to capitalist commodity production (Felli, 2014; Jones, 2009). On the other hand, nature-based tourism is a commodity production process where value reflects a portion of workers' labour-power spent on the production of the goods and services sold to tourists. When nature-based tourism businesses are owned by capitalist owners, such value results from the exploitation of workers by the capitalist and the profit represents a portion of the unpaid labour-time workers have spent working for him (Bianchi, 2011). When workers control such process, production workers appropriate the product of their labour and hence no surplus value is extracted. However, as this thesis shows, workers' ability to appropriate the product of their labour does not exclude appropriation by intermediaries and other workers of the value generated by petty commodity producers in the context of tourism.

Fourth, in contrast to the argument in the natural resource governance literature that state officers, conservation NGOs and international development institutions implementing forestry-related projects can and should contribute to local democratisation (Ribot et al., 2008; Ribot, 2011), the case of Bintang protected area suggests that these actors limit workers' ability to improve their living conditions. To defend the social relations of production enabling capital accumulation through nature-based tourism, these actors avoid workers' disagreement with exploitation and expropriation in various ways. As in other case studies (Dinerstein, 2014b; Velicu and Kaika, 2016), in Boko and Dioube working class villagers have improved their ability to shape decision-making processes in forestry-related projects through their disagreement with the class relations and norms enabling capitalist interests and through

their hope to change such norms and relations. In line with Shivji (2003) and Barca (2012), the Niomi case suggests that workers' struggles to defend and improve the conditions of their labour are central in the creation of fairer and more egalitarian societies and ecologies.

Deepening alienation

By mapping changes in the conditions of workers' labour in relation to the social relations of production, the thesis has illustrated the deepening alienation experienced by working class villagers from Boko and Dioube as a result of the development of nature-based tourism and PES projects and, more broadly, of the expansion of capital in their villages.

Fishermen and mollusc collectors formerly reliant on the resources in Bintang belong were alienated from the object of their labour through the turning of mangrove and terrestrial forests into an exclusively tourism-oriented private space. Rather than improving villagers' ownership of the conditions of their labour, the changes that these villagers have encountered in their everyday lives as they adapted to this enclosure and, more broadly, to the penetration of capital in Dioube and Boko have alienated them further. Although working class villagers from Dioube and Boko have experienced capital's enclosures and the subsequent generalisation of commodity production as alienation, they have attempted to find benefits within capitalist development. Such attempts may suggest that they are actually aware of their class situation and hence of the need to survive and adapt to a social system that they have little ability to reverse (Arrighi, 1970, p. 224).

Although the concept of alienation has been discussed in greater detail in chapter five, common to the various labour conditions here documented is workers' inability to self-manage their bodies in a context where money and capital are increasingly shaping material production. When selling their labour-power to owners of nature-based tourism businesses and PES projects, villagers have experienced alienation in the act of production. This type of alienation has materialised in their inability to decide about the rewards they have obtained from their labour and about the labour-time and effort spent on the production of tourism-related commodities and on the reforestation campaigns part of PES projects. Thus, the extraction of surplus value in nature-based tourism businesses and the implementation of PES projects at a low cost have gone hand in hand with villagers' inability to work more days than desired, with long and intense working days and with low wages and non-remunerated work. Villagers producing and selling commodities for eco-tourists on their own account have also experienced this alienation in the act of production. This has been evidenced by their inability to find customers for their self-managed tourism businesses and by the meagre rewards they have earned from their labour in these activities. The thesis has also demonstrated that

workers can also experience alienation in the act of production as a result of other workers' and project intermediaries' attempts to benefit from their labour. In Niomi, some of the villagers acting as intermediaries (between owners of nature-based tourism businesses and workers and between conservation NGOs and some of the workers occupying higher positions in the labour hierarchy) have used their position to appropriate value from other villagers, limiting the number of days they worked as well as the monetary rewards they have earned from their labour.

The mapping of decision-making processes around Bintang protected area in chapter seven has also illustrated how actors leading forestry-related projects have perpetuated villagers' alienation by avoiding workers' disagreement with the social relations enabling the expropriation and exploitation in the green economy. As the process of contestation around Bintang protected area suggests, what these actors negate through their resistance to workers' mobilisations is not only workers' freedom with regards to their labour, but also their attempts to "do otherwise", to create new ways of organising material production based upon egalitarian principles rather than on exploitation and expropriation (Holloway, 2010).

The thesis has illustrated the various ways in which the perpetuation of alienation has enabled capital accumulation. It has demonstrated that this relationship between alienation and capital accumulation takes place in action (Arrighi, 1970; Holloway, 1997). As workers have been adapting to the conditions imposed through the process of capitalist expansion in Niomi, they have encountered the power of capital anew, contributing to capital's survival in the process through their search for money (and hence jobs) and other commodities (i.e. means of production and subsistence). Capitalists' ability to benefit from such process of coping with alienation has not been the consequence of a conscious decision by capitalist owners, nor the outcome of a direct relation between a capitalist owner and alienated workers producing commodities for him. Rather, it has been the materialised result of a relation (i.e. capital) between alienated human beings (albeit in quite different conditions), hence an *indirect* one (Kicillof and Starosta, 2007).

This relationship between capital accumulation and labour alienation illustrated in the Niomi case brings into question the idea that the agrarian question today is that of labour, 'which is now separated from its historic connection to the agrarian question of capital' (Bernstein, 2004a, 2004b, 2006). Moreover, it suggests that Bernstein's thesis fails to appreciate the continuation of the exploitation of Sub-Saharan African countries today by capital coming from the global North, as Moyo (2008, p. 75) has noted.

In spite of the fact that alienation is an ongoing process intensified by enclosures and the continuation of exploitation, findings here suggest that alienation is not a state imposed on workers through capitalist development, but rather a social condition against which workers struggle in order to defend and improve their living conditions (Shivji, 2003). As in many other contexts (Böhm et al., 2008; Dinerstein, 2014b; Velicu

and Kaika, 2016), in Boko and Dioube workers have complained against expropriation and exploitation and, by doing so, they have contested their alienation and the social relations of production in the green economy. However, their mobilisations have faced the resistance of capitalist owners and those acting on their behalf, among others state actors. The role of the state in perpetuating the alienation of workers highlights the need to question the state and not only capital when exploring the separation of workers from the conditions of their labour (Dinerstein, 2014a).

Questioning the potential of green capitalist economies for poverty reduction

Findings here challenge the view of nature-based tourism and forestry-related PES projects as an opportunity for the reduction of poverty in the global South (UNEP, 2008, 2011). By analysing the social relations of production around nature-based tourism and forestry-related PES projects in Niomi through the lenses of Marx's critique, the thesis has shown that green capitalist economies are aimed at benefitting non-workers rather than workers. The main objective in PES projects and in nature-based tourism is not the reduction of poverty, with the exception of the case where workers produce commodities for nature tourists by themselves. Not only are the poorest (all of whom are workers) used as a means for the attainment of non-workers' interests through the green economy. More importantly, it has illustrated how capitalist interests in the green economy are attained at the expense of workers' autonomy, through exploitation, expropriation and resistance against workers' mobilisations to gain ownership of the conditions of their labour. The maintenance of the social relations of production enabling the development of green capitalist economies therefore rely upon the perpetuation of workers' alienation, that is, on their perpetual inability to control decisions about the green economy and on the subsequent control of such decisions in the hands of non-workers.

The focus on the conditions of workers' labour in this research has provided a broader view about workers' experiences of being poor that goes beyond a narrow focus on income, wages and job opportunities. Such broader perspective, findings here suggest, can involve analysing workers' relationship to their own bodies (for example, by mapping their ability to control the labour-time and effort spent on securing subsistence and to decide over the economic activities they do) and their relationship to the universe, that is to other human beings and non-human nature (i.e. their ability to shape the functioning of such relations). In this sense and as this research illustrates, alienation can be a useful way of mapping workers' poverty. If poverty is viewed in these terms, green capitalist economies are not only failing to reduce poverty, but also perpetuating it as well as its root causes.

How should green economies work in order to improve the living conditions of working class villagers? The study of the social relations of production suggests that in order to enhance workers' lives, green economies should be not only classless, but also based

upon non-waged, non-commodified and long-lasting sources of work. More importantly, they should result from workers' initiative rather than from the initiative of capitalists and those acting on their behalf. This would mean that workers should collectively lead decisions about the functioning of production, distribution and exchange in these economies and build relations of solidarity between them to do so.

Beyond the green focus: material production

This thesis suggests that the social foundations and implications of green economies can be understood in greater depth when contextualised within the broader functioning of material production and hence of labour in the society studied. This approach provides a more holistic and context-specific understanding of green economies and connects workers' everyday lives to capital accumulation processes taking place at various scales and at various economic sectors, looking at their connection with other social inequalities.

By focusing on material production the thesis has shown that land expropriations and exploitation in the context of the green economy do not entail a transition from a pre-capitalist economy to a capitalist economy. Instead, they are taking place within contexts where capital is already shaping villagers' everyday lives. Moreover, the thesis has demonstrated that the consequences of nature-based tourism and PES projects extend beyond the green economy. Fishermen and mollusc collectors' adaptations to the privatisation of mangrove forests following the creation of Bintang protected area have been influenced by other capital's enclosures and by the broader situation of poverty and generalised commodity production generated through the neoliberalisation process in Senegal. These adaptations have benefited private companies in other sectors due to villagers' consumption of the commodities sold by capitalists. Gatekeeping in PES projects has been used as a means of accumulation in other sectors, thus multiplying the opportunities for exploitation. Villagers' experiences of exploitation in migrant destinations have made many of them return to the village and engage in the nature-based tourism sector as wage-labourers. This context has maintained the value of villagers' labour-power at cheap prices, allowing owners of nature-based tourism businesses and leaders of forestry-related PES projects to reach their goals. These examples are unlikely to be unique to Niomi because, as chapter two has shown, most countries in the global South have been subject to the same neoliberal process that has taken place in Senegal (Araghi, 2009; Ndikumana and Boyce, 2011; Ould-Mey, 2003).

Studying green economies through a focus on material production also allows researchers to explore the negative environmental implications of capital's prominent role in the functioning of material production in a given context, for example in the green economy. As the notion of climate/carbon/environmental rent used in this thesis suggests, it enables us to see that green capitalist economies are led by those causing the major environmental and climate problems we face today, hence their failure to deal

with the underlying drivers of environmental degradation. Rather than contributing to avoid the climate and environmental crises that capital generates, nature-based tourism and PES projects are depoliticising the environmental problems associated to capitalist production while alienating those who preserved the nature that this economy benefits from. The thesis hence illustrates the idea of capital as an ecological regime (Harvey, 2014; Moore, 2011).

One of the most important aspects of material production and labour lies in their connection with everyday life. Studying these issues allows researchers to explore how different people in different contexts experience everyday life in capitalist societies. This thesis has studied what it means for rural working class villagers from Niomi to live in neoliberal and neo-colonised Senegal, illustrating the various problems that people face as a result of the power of capitalists and state officers in and out the green economy. This approach can be used to study other contexts and expose the social drivers of alienation, poverty and inequality.

Capital beyond its supposed essential features

In contexts such as the one here studied where the social relations of capitalist production have expanded and converge with other social relations, one may wonder whether it is still relevant to study how capital shapes everyday life in rural areas today. In contrast to Bernstein's view that the agrarian question of capital is no longer relevant today given such expansion (Bernstein, 2004a, 2004b, 2006), this thesis shows that this is still a pertinent question, but that in order to find its relevance it is necessary to study the social relations of capitalist production beyond their supposed essential features, that is, beyond the presence of capitalists and commodity producers working for them (Gibbon and Neocosmos, 1985), the workplace (Böhm et al., 2008) and direct relations between capitalists and workers (Kicillof and Starosta, 2007).

The thesis has stemmed from the view that capital is not only the pursuit of profit, but also a social relation of exploitation and appropriation between workers and non-workers that expands in society through the generalisation of exchange-value (i.e. money), commodity production and commodified labour (Dinerstein, 2002; Gibbon and Neocosmos, 1985; Lerche, 2007; Marx, 1967, p. 733; Neary, 2002). Through this perspective it has shown how PES projects serve to advance capitalist interests despite not being profit-driven and how they are based upon relations of exploitation and appropriation even though no surplus value is extracted. It has also emphasised the role of hierarchical structures around decision-making, the state and gender inequalities in the exploitation of workers, in the appropriation of their value and in their repression. Thus, the research has provided a broader critique of capitalist societies that goes beyond capital and includes a wide range of inequalities. Therefore, the approach here followed can deepen future critiques of emerging green capitalist economies and

capitalist societies.

By looking at the social relations of capitalist production beyond their supposed essential features the thesis has shown that although many villagers in Boko and Dioube did not become landless and wage-labourers and some of their economic activities were commodified, they experienced alienation. Equally, it has illustrated how villagers engaged in petty commodity production and unemployed workers also experience the power of capital (Bernstein, 1989; Dinerstein, 2002; Gibbon and Neocosmos, 1985) in their everyday lives. Capital is therefore a process that entails a wide range of transformations not restricted to the realm of work and that shape their economic activities, their relations to other human beings, to non-human nature and to space. If it is necessary to look beyond “green” goals and beyond capital’s supposed essential features, the role of research on green capitalist economies is therefore nothing other but exploring how various social relations shape everyday life as the preservation of nature becomes a means of advancing capitalist interests.

Neo-colonial green economies

The prominent role of European capitalists, governments and development institutions in the occupation of land and the exploitation of labour in Niomi legitimises scholars’ concerns about the similarities between green capitalist economies and colonial times (Bachram, 2004; Böhm et al., 2012). This evidence also suggests that nature-based tourism and PES projects in Niomi are perpetuating the already existing power of foreign capitalists in Senegal (Dembele, 2003). At the same time, the role of enclosures and foreign debt and structural adjustment programmes in the formation of a reserve army of cheap labour for nature-based tourism businesses and forestry-related PES projects suggests that, although unintentionally, neo-colonial processes of accumulation by dispossession in some sectors contribute to the reproduction of neo-colonialism in other sectors.

The importance of exploitation and expropriation illustrated in this thesis suggests that when illustrating the neo-colonial character of green economies it is necessary to take into consideration labour relations and not only ecological relations (Bumpus and Liverman, 2011; Felli, 2014a). Although this research has not investigated the relationship between this neo-colonial character and racism, it is likely that the social relations of production in nature-based tourism and PES projects are also contributing to preserve racial difference and relations of exploitation between black and white people (Baldwin, 2009). Future research on this topic will be crucial in exposing how poverty and inequality are reproduced through green economies.

Heterogeneity in green economies

Findings here emphasise the heterogeneity of green economies. By looking at labour as the creator of use-values and at commodities as an expression of socially-necessary labour-time, this thesis has drawn a distinction between nature-based tourism and PES schemes, challenging the idea that both of them are profit-oriented. While the material properties of the nature(s) being preserved through monetary incentives are important to understand the ways in which the neoliberalisation of environmental governance works in practice (Bakker, 2007; Duffy, 2013; Loftus and March, 2015; Robertson, 2004), it is also necessary to be specific about the ways in which different aspects to the green economies relate to the process of capital accumulation. The distinction between nature-based tourism as a commodity production process and PES schemes as one of environmental rent creation here made can be of use for future research. It can put researchers in a better position to understand workers' greater reliance on the sale of their labour-power in nature-based tourism than in PES projects. Equally, it can allow them to understand in greater depth the specific ways in which exploitation and expropriation relate to capital in nature-based tourism and in forestry-related PES projects.

This research also emphasises the need to take into consideration differences in the conditions of workers' labour. The different conditions in which villagers were fishing in Bintang bolong led them to experience the closure of this Bolong in diverse ways. More importantly, the thesis has shown that the heterogeneity of green economies is associated with workers' agency and imagination (desires, plans, intentions) (Graeber, 2001) and hope (Dinerstein, 2014b). Working class villagers' plans, desires and intentions have led to differences in their ways of adapting to the closure of Bintang bolong and of contesting expropriation and exploitation.

Workers' agency also makes the formation of the social relations of capitalist production in green economies a non-linear and unpredictable process. Villagers' needs and desires led them to abandon their jobs in nature-based tourism businesses, to refuse to work again for PES projects, to negotiate with employers, to take resistance actions and to complain about workers' appropriation of the money generated through the community-based restaurant. Their hope also led them to believe that they could change working conditions and conservation rules in Bintang protected area. Through these actions, they affected the ability of capitalists and leaders of PES projects to exploit and expropriate them and shaped the ways in which the green economy worked out in practice.

Acknowledging the role of workers' desires and the heterogeneity within their class is not a mere scientific issue, but also a political one. The use of methodological approaches that study labour and hence workers as individuals with feelings, desires and

ability to create creators enable us to realise that all humans can be architects of the societies and the ecosystems they inhabit and not only the wealthy. They also lead to a more empowering perception of democracy where those of us who do not govern have also the capacity and the need to change the conditions through which our autonomy is limited.

The role of Marx's critique of political economy

Marx's theory has been and is still widely criticised as structuralist, deterministic, capitalocentric, focused on production and as oblivious of agency, culture, gender relations and context specificities. While it may be true that many authors using Marx's work have taken such perspective, findings in this thesis suggest that, despite its limitations, Marx's critique of political economy is still a highly valuable theoretical and analytical tool for three reasons. First, it enables researchers to see (green) economies beyond the use-values they provide, looking at nature-based tourism, carbon credits and green jobs as expressions of unequal social relations. By doing so, it can enable researchers to notice how human relations are being built as these economies develop. Secondly, Marx's ideas allow us to understand expropriation and exploitation beyond direct interactions between human beings, thus, showing how taxes, state policies and rent creation can perpetuate the class system that oppresses workers. Third, through its focus on labour and material production, Marx's theory provides researchers with analytical tools to understand in greater depth the implications of capital's expansion through the green economy for workers' everyday lives, achieving universality while being context-specific (Lefebvre, 1991b). From this view, Marx's critique of political economy provides us with the tools to destroy illusions about the benefits of capital (From, 1962, p.151) and with a better understanding of the history of poverty that can contribute to make poverty history (Shivji, 2007, p. 37).

8.4. Concluding remarks

The current situation of global warming and environmental degradation on our planet encourages us to find alternative ways of producing our needs. This thesis suggests that, when doing so, we should also be thinking about the social relations of production behind the emergence of these economies. By exploring how such relations have been shaping the conditions of workers' labour in Niomi, this thesis has shown that capital is not the only the driver behind the ecological and climate disasters that are depoliticised through nature-based tourism and forestry-related PES projects, but also the social relation perpetuating poverty and inequality in these contexts. The expansion of the social relations of capitalist production through the green economy in Niomi is benefitting non-workers by imposing oppressive conditions on workers that deepen their alienation in various ways and silence their disagreement with exploitation and expropriation. Such expansion is also extending existing neo-colonial relations between

Europeans and Africans and generating new relations of exploitation at the local level.

Workers' struggles against exploitation and expropriation mapped in this thesis suggest that it is possible to create environmentally respectful economies that allow the poorest to improve their living conditions. However, they also suggest that this is likely to be a long-term challenging process of transformation that will probably face resistance by capitalists and those acting on their behalf. Despite difficulties, this thesis provides important lessons for those wanting to move in such direction. First, in order to reduce poverty, the production of green economies should be based upon relations of respect, solidarity and mutual aid rather than on class relations (Barca, 2013; Graeber, 2011, pp. 95-98; Pickerill and Chatterton, 2006; Shivji, 1989). Second, scholars interested in contributing to this process through their research will benefit from reflecting on how their ontologies and epistemologies legitimate and obscure social injustices. They will also gain from moving away from the question of 'what enables the accumulation of capital through conservation' and concentrating on workers' everyday life experiences in capitalist societies and the relationship of such experiences with the functioning of material production in the context studied. When exploring such experiences it will be particularly useful to draw upon Marx's critique of political economy, explore the conditions of workers' labour and investigate the connections between capital and other systems of oppression such as the state, gender, racism and neo-colonialism (Barca, 2015; Barket and Pickerill, 2012; Engel-Di Mauro, 2013; Peet, 1978). Finally, when envisaging the potential of social science research to contribute to human emancipation, scholars will benefit from reflecting on the functioning of academia itself and therefore on the publication models and research methods through which they can fulfil their ethical compromise.

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