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Conserving ~~nature~~ power:

An exploration of biodiversity offsetting in Europe and beyond

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I hereby declare that this thesis has not been and will not be submitted in whole or in part to another university for the award of any other degree.

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Summary

This dissertation draws on multi-sited fieldwork to understand the history and development of biodiversity offsetting in Europe and beyond. It situates offsetting as a *social technology of governance* in the management of resistance and dissent against corporate and state degradation and violence, and as an instrument to flexibilise restrictive legislation imposing limits to industrial expansion in Europe.

I analyse offsetting through the lens of corporate and state power and violence, contextualising it in the dominant social economic order, exploring its role in the advancement of social control and accumulation, and in the invisibilisation and entrenchment of the epistemic, physical and slow violence(s) exercised against human and nonhuman nature, in the form of industrialism and extractivism, state control and policing of dissent.

While a critical literature on offsetting now contributes to our understanding of the tensions, politics and value struggles around offsetting, it has tended to focus on the 'novel' commodification and marketisation aspects of offsetting. It frequently privileges structural explanations rooted in the expansionary market logic unleashed under neoliberal capitalism, while overlooking the long history of the ideology and practice of offsetting, deeply rooted in industrialism, domestication and exploitation of human and nonhuman nature, and the need for corporate and state legitimacy in the face of (increasingly visible) social and ecological degradation and ever-more apparent failures of the green economy.

By situating offsetting *historically* and in its *political economic* context, this thesis demystifies and denaturalises abstract ideas of the 'market'. It challenges the emerging hegemony of critical analyses of offsetting that often resort to marketisation and financialisation as explanatory devices and contributes to the theorisation of the ongoing transformation of neoliberal capitalism, statehood and corporate citizenship, as part of wider processes of reconfigurations of governance that are the product of the dialectical relationship between capitalism, the state, and its critics.

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Lastly, but most importantly, this work wouldn't have been possible without the inspiration and motivation by the people fighting extractivism, oppression and ecocide around the world, imagining and living the better future we want to see. This thesis is dedicated to the Hambacher Forst, the forest defenders and all that resist the destruction of nature across the world.

Love, rage and solidarity!

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List of Abbreviations

BBOP   Business and Biodiversity Offset Programme
CBD   Convention on Biological Diversity
CEO   Chief Executive
CI   Conservation International
CSR   Corporate Social Responsibility
DEFRA   Department for Environment, Food & Rural Affairs
DG   Directorate General
EBRD   European Bank for Reconstruction and Development
EC   European Commission
EIB   European Investment Bank
EITI   Extractive Industries Transparency Initiative
ERT   European Roundtable of Industrialists
ES   Ecosystem Service
ESG   Earth System Governance
ESIA   Environmental and Social Impact Assessment
EU   European Union
FoE   Friends of the Earth
FoN   Financialisation of Nature
GMI   Global Mining Initiative
GRI   Global Reporting Initiative
ICMM   International Council on Mining and Metals
IFC   International Finance Corporation
IIED   Institute for Environment and Development
IMF   International Monetary Fund
IUCN   International Union for the Conservation of Nature
KIN   Kellogg Innovation Centre
LDN   Land Degradation Neutrality
MA   Millennium Ecosystem Assessment
MBI   Market-Based Instrument
MMSD   Mines, Minerals and Sustainable Development
NCf   Natural Capital forum
NCFF   Natural Capital Financing Facility
NNL   No Net Loss
NNLi   No Net Loss initiative
NGO   Nongovernmental Organisation
NPI   Net Positive Impact
OECD   Organisation for Economic Co-operation and Development
PNG   Papua New Guinea
PR   Public Relations
QMM   QIT Madagascar Minerals
TEEB   The Economics of Ecosystems and Biodiversity
UN   United Nations
UNEP   United Nations Environmental Programme
UK   United Kingdom
US   United States of America
WBCSD   World Business Council of Sustainable Development
WWF   World Wildlife Fund
ZSL   Zoological Society London

1. Introduction: conserving nature or conserving power?

[S]ocieties that dominate nature also dominate people. Where there is the idea that a massive dam should be built to control a river's flow, there is the idea that people should be enslaved to build it; where there is the belief that a giant metropole may serve itself by despoiling the surrounding countryside and devouring its raw materials, there are castes and hierarchies to ensure that this is accomplished (Sale, 2000: 122, drawing on Bookchin).

Biodiversity offsets are more about managing communities and livelihoods than about managing biodiversity per se (Lori Anna Conzo, Environmental Specialist for the International Finance Corporation, Conzo, 2012).

German energy giant RWE, I am told by one of my RWE interviewees, makes two products: cheap electricity and pretty new landscapes (E3). These 'pretty new landscapes' are meant to *compensate* for the destruction of the *Hambacher Forst*, the neighbouring old-growth forest that has had to give way to the encroachment of the world's largest open cast coal mine in the German Rhineland. The same logic is being applied to the over 5,000 residents who have lost their homes due to the mine over the past forty years and are being resettled with the promise of 'bigger' and 'better' housing in new villages that are being "built from scratch", as I am told (E4). Both the human and the nonhuman ecological 'costs' of the mine are being compensated in remarkably similar ways. Despite acknowledgement of 'irreversible loss' for the sake of the 'greater good', this compensation is based on similar assumptions of fungibility, equivalence and restorability of human and non-human environments. While this dissertation focuses on the latter – the institutionalisation and normalisation of the offsetting of nonhuman nature ('biodiversity') – it is also inherently social, I will argue, as it serves to invisibilise the human *and* ecological 'costs' of development, and the multiple forms of violence it encompasses.

Biodiversity offsetting – based on the idea that the destruction or degradation of nature can be meaningfully offset through the restoration or avoided loss of nature elsewhere – has become a popular policy instrument and corporate tool in Europe. Some European governments have recently introduced offsetting legislation in different forms and shapes (as in the United Kingdom, UK, or Spain), while others have a long history of offsetting regulation (such as Germany or the Netherlands). European transnational corporations, particularly in the extractive sector, many listed on the London Stock Exchange, have been pioneering offsetting initiatives across the world – in Madagascar, Mongolia and Namibia, among others. Within Europe, major mining and infrastructure projects have come to rely on offsetting to secure their local acceptance. The German coal mining industry, for instance, has historically invested in restoration, recultivation and, more recently, habitat compensation measures ever since it

commenced mining operations to ensure local and political support for its activities. Two major (and strongly resisted) proposed airport expansions in London and Nantes were designed to involve biodiversity offsetting, and even the University of Sussex has been offsetting its more recent expansion into the South Downs National Park (personal communication).

These projects have been going hand-in-hand with the institutionalisation and normalisation of offsetting on an international, and now the European Union (EU) level. This includes, firstly, the efforts of major financial institutions, such as the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and the World Bank's International Finance Corporation (IFC) to incorporate offsetting into their lending requirements and performance standards for project finance and the channelling of public conservation funds through the Natural Capital Financing Facility (NCFF) to finance large project offsets. Secondly, it involves the formal policy process through which No Net Loss (NNL) is becoming part of EU nature conservation legislation, culminating in the NNL (of Ecosystems and their services) initiative of the European Commission (EC) and the associated NNL working group. And thirdly, it takes place in the European high-level meetings and conferences where offsetting discourses and the *offsetting industry* are spread and (re)produced.

When the EC first announced the NNL initiative (NNLi) to achieve its NNL of Biodiversity target, it was met with outcry by grassroots environmental (justice) activists and critical academics. 'Nature is unique', they argued, 'you can't replace 'nature here' with 'nature there''. Grassroots groups started campaigning (successfully) against the initiative and publicly denounced biodiversity offsetting as commodification, marketisation and financialisation of nature, under the slogan that 'nature is not for sale' (Nature Not for Sale, n.d.). Critics from these movements, as well as social and natural scientists, pointed to the many practical, theoretical, ethical and philosophical problems with this newest wave in the commodification of Europe's nature. Experiences in Australia (Maron et al., 2012, 2015; Gordon et al., 2015), the US (Robertson, 2004, 2012; Burgin, 2010; Kaiser, 2001; Kihslinger, 2008) and elsewhere (Santos et al., 2015; NRC, 2001; Turner, Redmond and Zedler, 2001; Hallwood, 2007) had shown that the 'success rate' of offsetting was questionable at best. They pointed to the problems of measurements, accounting methods and lack of fungibility and commensurability of nature. More or less implicitly or explicitly, many blame(d) the capitalist drive for ever-further commodification and marketisation of ever more areas around us, the inherent expansionary drive of capital and the profit-drive of the current socioeconomic system (as we will see in the literature review). These critiques have been very useful in analysing the interests and assumptions involved in offsetting,

and their inability to compensate for 'actually existing destruction' in 'actually existing places' with human and nonhuman relationships. They illustrate the value struggles and the politics around tools and measurements, and play important roles in delegitimising offsetting. Others have worked out excellent critiques of the economic rationality and quantitative frameworks underlying the offsetting ideology, and the profit accumulation through offsetting taking place particularly in the US and Australia (e.g. Robertson, 2004, 2006; Pawliczek and Sullivan, 2011; Niner et al., 2017; Maron et al., 2015). Such critiques have been fundamental to the successful contestation of the establishment of the NNLi.

This dissertation aims to contribute to this literature by situating the role of offsetting in the managerial governance of resistance and dissent; contextualising offsetting historically and examining how it plays out on the ground. It embeds offsetting in the political economy of nature conservation and extractivism by examining it through the lens of power and violence in Europe and beyond. While the analyses outlined above have contributed enormously to our understanding of the processes and dynamics at play, they tend to focus on the 'novel' commodification and marketisation aspects of offsetting; sometimes privileging structural explanations rooted in the expansionary market logic unleashed under neoliberal capitalism, while ignoring the long history of the ideology and practice of offsetting, deep-rooted in industrialism, domestication and exploitation of human and nonhuman nature, and the need for corporate and state legitimacy in the face of (increasingly visible) social and ecological degradation and ever-more apparent failures of the green economy.

The focus of my work lies on *corporate and state power* because offsetting cannot be analysed without an understanding of the social economic order and the use of offsetting for the advancement of social control and accumulation. I focus on *violence* because offsetting contributes, I argue, to the invisibilisation and entrenchment of the epistemic, physical and slow violence(s) exercised against human and nonhuman nature, in the form of industrialism and extractivism, state control and policing of dissent. The focus lies on *Europe* because, although offsetting is not a European phenomenon, much of the *offsetting industry* that I explore in this thesis is anchored, institutionally and intellectually, in Europe, and many of the corporations that are driving offsetting (e.g. from the mining sector) are European companies, listed on European stock exchanges and/or headquartered in European capitals. At the same time, the analysis goes *beyond* Europe because the history of offsetting in Europe is inseparable from the history of offsetting outside Europe, from corporate engagement particularly in resource-rich countries in the global South, and state involvement, including through international financial institutions, abroad. Offsetting needs to be situated *historically* and in its *political economic*

context to understand where it is coming from, why actors engage with it, and what its consequences are.

1.1.   Research aims

This dissertation engages with the places and spaces of offset-making in Europe: the international conferences where offsetting is positioned as a solution to the loss of the world's natural capital; the EU policy processes that serve to normalise and institutionalise offsetting in European conservation legislation; the international initiatives that involve offsetting to establish 'green mining' and cleaner coal, and finally an offsetting project 'on the ground' – to compensate for RWE's Hambach coal mine in the German Rhineland.

I firstly explore the role of offsetting in the ongoing transformation of neoliberal capitalism, statehood and corporate citizenship, as part of wider processes of reconfigurations of governance that are the product of the dialectical relationship between capitalism, the state, and its critics (cf. Kirsch, 2014). These transformations have gone hand in hand with escalations in authoritarianism (Bruff, 2016), "authoritarian populism" (Scoones et al., 2018: 1) and a deeper entrenchment of the state and particular economic relations into every aspect of life. Rather than accepting these economic relations – often referred to as neoliberalisation or marketisation – as drivers, however, I analyse the specific ways these transformations are accomplished in concrete cases, and historicise the institutionalisation and normalisation of offsetting in the history of green mining.

Secondly, this research aims to contribute to demystifying and denaturalising abstract ideas of the 'market' (Wood, 1994; Lacher, 1999) and challenge the hegemony of critical analyses of offsetting which resort back to marketisation and financialisation as explanatory devices. The market, George Monbiot has argued, "sounds like a natural system that might bear upon us equally, like gravity or atmospheric pressure ... Its anonymity is both a symptom and cause of its power" (2016). By contrast, I aim to lay bare the lack of meaning in the abstraction of the idea of 'the market', and show how it acts as 'empty signifier', mobilised for particular interests. By focusing on the productive power of offsetting – in the governance of dissent, the invisibilisation of violence, and legitimisation of destructive activity, I aim to explore how offsetting relates to more fundamental processes of domestication, oppression and control of human and nonhuman nature. This denaturalisation and demystification, I hope, can help show cracks and fissures in the networks of power, to identify places and spaces for resistance, and to

overcome "critique for critique's sake" (Walker, 2007: 365). As Connor Cavanagh and Tor Benjaminsen argue:

> [R]egardless of whether the object of our critique is development, capital, or the green economy, this can occasionally inspire little more than melancholia if not coupled with an assessment of possibilities for progressive action at multiple scales in the present (2017: 202-3).

Thirdly, by focusing on Europe, this research corresponds to the call to examine political ecologies of destruction and degradation in Europe; to `go near', in the words of Laura Nader (1972), but also to go `upwards', towards the centres of political ecological power (Robbins, 2002). Whereas many of the dynamics and forms of violence that I outline in chapter six are well-researched in the global South, they are more subtle, less visible and possibly even more entrenched in Europe, making them harder to contest. Yet, the historical responsibility – and political economic power – responsible for climate change and ecological degradation continues to be concentrated in the global North.

This dissertation thus asks:

- How has biodiversity offsetting been appropriated and revived by corporate and state actors in Europe and beyond?
- What is the place of offsetting in the social governance of resistance and dissent and how is it shaped by that process?

This research approaches biodiversity offsetting in the framework of the global and local political economy, state and corporate power and violence. I will argue that offsetting should be understood as a *social technology of governance* – a tool to manage resistance and dissent against corporate and state degradation and violence, and an instrument to flexibilise restrictive legislation imposing limits to industrial expansion in the EU. Biodiversity offsetting is mobilised to mediate between corporations, states and conservation organisations, by bringing people together and creating spaces and networks into which critics are co-opted. To develop this argument, I engage empirically with offset-negotiations and offset-making in different places and spaces across Europe and I travel (intellectually and physically) to different sites that have been, or continue to be, relevant for the institutionalisation and normalisation of offsetting in Europe.

The remainder of this introduction consists of five parts. Firstly, I introduce (the history of) biodiversity offsetting in Europe and what I will later name the *offsetting-extraction nexus*. Secondly, I provide an outline of the remainder of this dissertation, before, thirdly, exploring the ethics and the politics of my work, and the motivations for engaging in this project. I then

elaborate on the methodological choices and frameworks used, before concluding with some reflections on the research process.

1.2.   Offsetting in Europe: institutionalisation and normalisation

Biodiversity offsets, according to proponents, constitute "conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity" (ten Kate, Bishop and Bayon, 2004: 13) – a definition that I will come back to later on. Offsetting relies on the *theoretical* commensurability or fungibility of nature that allows for the creation of equivalence between lost nature and restored or protected nature. It further rests on the acceptance of (unavoidable) residual loss of development projects and the calculations of baselines and counterfactual scenarios that enable claims of additionality and NNL – or net gain – of biodiversity. Most offsetting schemes are embedded in Environmental and Social Impact Assessment (ESIA) processes and form part of the mitigation hierarchy which requires (at least formally) the avoidance and minimisation of destruction before resorting to offsets. Some offsetting policies allow for the purchase of offsetting 'credits' which are supposed to guarantee NNL or net gain of biodiversity. In such schemes, biodiversity needs to be 'measured' and accounted as 'loss' and 'gain' in different currencies such as habitat for a particular (threatened) species – habitat banking – or kind of ecosystem – wetland mitigation banking. Different accounting technologies and metrics are employed to calculate these values and ratios, and multipliers are meant to incorporate uncertainties (such as restoration success) or associated risks and ensure that no habitat is lost. In practice, however, 'rule-of-thumb' solutions are common in offsetting programmes (Walker et al., 2009).

Compensation and offsetting, and in-kind and out-of-kind replacement, tend to be differentiated in offsetting practice. Yet, offsetting has come to constitute a generic term for compensation schemes and projects that are based on the idea of commensurability of nature and concepts of NNL or Net Positive Impact (NPI) (Greenhalgh et al., 2010; Tregidga, 2013). I will therefore use these terms interchangeably. Furthermore, offsetting professionals and scholars usually differentiate between voluntary and mandatory offsetting – a difficult distinction given the blurry line between the two. Whereas some countries have developed mandatory legislative frameworks or policies, usually as part of their planning procedures, the absence of such a mandatory framework can in practice still mean that a permit is approved only upon the developer's willingness to offset, and previously non-permittable development may be approved (as Sullivan and Hannis, 2017, show in the UK). In addition, even where governmental

policy does not dictate offsetting, project finance providers, e.g. the IFC, may require the developer to offset (chapter four). Many 'voluntary' projects further constitute 'pre-compliance' projects, in expectation of future legislation (Bennett, Gallant and ten Kate, 2017). To further complicate, many projects involve offsetting, but do not explicitly *name* offsetting – partly because, as an environmental consultant explains to me, offsetting has received "too much bad press" (B2). Offsetting is widely used as part of policies and corporate programmes under different names – by reference to the mitigation hierarchy, 'net' conservation gains, the need for compensation, mitigation, restoration, and replacement of lost habitat, for instance – and not recognised as offsetting as such (see also Reid and Nsoh, 2016: 131; Bull et al., 2016).

Biodiversity offsetting projects and policies have rapidly proliferated over the last couple of decades and can now be found on every continent except Antarctica (Lave and Robertson, 2017: 231). In 2016, Ecosystem Marketplace estimates, roughly US$4.8 billion were spent on biodiversity offsets globally, almost twice as much as five years earlier (Bennett, Gallant and ten Kate, 2017). They tracked 99 regulatory programmes in 33 countries (2017: 3). Biodiversity *banking* systems, which involve the sale of mitigation credits for the restoration, establishment of preservation of nature (wetlands, habitat, species or streams) for the compensation of damage by third parties to the developer, are heavily concentrated in the United States (US), Australia, Germany and Canada. An estimated 97% of all offsetting activity is conducted by the developers themselves, and the energy/extraction industries and (to a lesser degree) the transport sector have been responsible for 97% of all offsetting activity; with "virtually all offset land area reported as of 2016 funded by the energy development/extraction industry" (Bennett, Gallant and ten Kate, 2017: 5).

Existing EU legislation mandates offsets for the destruction of habitat protected under the EU Birds and Habitats Directives as well as limited compensation under its Environmental Liability Directive and Environmental Impact Assessment regulation. The EC's recent NNL initiative that came out of the 2020 Biodiversity Strategy (EC, 2011a) aims to institutionalise offsetting outside protected areas. Meanwhile, a number of European countries (Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, Spain, Sweden, Switzerland and the UK) have initiated national or subnational offsetting frameworks and/or developed offsetting pilot projects, some of which have been met with public pushback. Pilot projects in France, Spain, the Netherlands and the UK have not been very successful (Bennett et al., 2017).

The oldest and most developed compensation system exists in Germany, of special importance in this thesis, and further elaborated in chapter six. It is grounded in the German 'Impact

Mitigation Regulation' (*Eingriffsregelung*), established under the 1976 Federal Nature Conservation Act (amended in 2002 and 2009, BNatSchG, 2009), as well as amendments to the Federal Building Code (BauGB, 1998). The *Eingriffsregelung* constitutes a set of rules, rather than a single piece of legislation, and differs across the 16 German states. It is stated to strive for NNL, requiring avoidance of damage, restoration and compensation for 'residual unavoidable impacts'. The Federal Nature Conservation Act (BNatSchG, 2009) now allows for the creation of compensation pools (resembling habitat banks), mainly run by municipalities, that facilitate the bundling of offsetting needs and large-scale offsetting. Offsets can be undertaken anywhere in the state, and pools are meant to increase efficiency and cost-effectiveness of compensation measures (BMU, 2004). Compensation agencies provide offsets to developers. Private companies, including coal mine operator RWE (whose offsetting activities will be explored in chapter six), can receive eco-points for enhancing and upgrading natural areas (e.g. from spruce forest to beech tree forest) and sell them to municipalities as offsetting measures (Steinbach, 2015; see also Küpfer, 2008). These eco-points, attributed to the outcomes of compensation measures as well as development impacts, become the measurement unit for environmental loss (debits) and gains (credits) to allow for NNL claims (IEEP, 2014a). Eco-points are classified according to impact categories (such as soil, water, habitats/species or landscape features) and offsets must fall in the same category (IEEP, 2014a).

The system is run by the public sector: 80% of biodiversity banks, known as compensation pools, are managed by local governments (Bennett, Gallant and ten Kate, 2017: 47), and transactions are highly regulated. Recent reforms, however, have led to a more flexibilised and less stringent system that facilitates more destructive development, campaigners have reported.[1] According to Ecosystem Marketplace, the country is developing "more market-like features and involving private operators", thus attracting more private investors (Ecosystem Marketplace, n.d.a). Spatial and temporal flexibility (geographic disconnect), as well as "the possibility of 'storing' anticipated offsetting measures" were introduced through legislative amendments in 2002 and 2009 (IEEP, 2014a; Mazza and Schiller, 2014). The 2009 amendment differentiates between replacement compensation measures (*Ersatzmaßnahmen*) and restoration compensation measures (*Ausgleichsmaßnahmen*) (IEEP, 2014a). Whereas the latter is spatially, functionally and temporarily linked (on-site and in-kind), supposed to ensure "equal ecological functioning and [ecosystem] values"; the former allows for more functional and spatial flexibility, i.e. out-of-kind and off-site measures (IEEP, 2014a: 16). The Nature

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[1] German planning authorities frequently failed to find sufficient offsetting sites, which led them to wave compensation requirements because of the practical challenges to their implementation (Tucker et al., 2014; Mazza and Schiller, 2014). The increasing flexibilisation is meant to address this.

Conservation Act, in its 'technical criteria', stipulates in-kind or out-of-kind compensation (BNatSchG, 2009), preferring (but not legally requiring) restoration compensation over replacement compensation. Compensation payments are considered a last resort within the mitigation hierarchy (BNatSchG, 2009; IEEP, 2014a), a number of steps that involve the avoidance and mitigation of environmental damage before offsetting. The act further requires the developer to prepare an accompanying landscape conservation plan, outlining planned measures (BNatSchG, 2009).

Meanwhile, companies – particularly from the extractive and energy sectors – have been pioneering project offsetting across the world, often as part of corporate conservation partnerships with nongovernmental organisations (NGOs) (chapters four and five). By 2015, 32 leading transnational corporations, many from the mining, metal and aggregates industries, publicly committed to NPI or NNL policies (Rainey et al., 2015). They were led by Solid Energy (New Zeeland's largest open cast mining company) and Rio Tinto (UK-listed metal and mineral mining corporation) (TBC, 2012; Rio Tinto, 2012a), followed by major sector leaders and almost a third of corporate members of the International Council on Mining and Metals. Other high-profile industries include the aviation industry and the construction sector, involved in high-speed railway projects, airport expansions and (renewable) energy infrastructure. European corporations have been experimenting with offsetting abroad, too. One particularly well-studied offsetting project was implemented by British-Australian multinational Rio Tinto in Madagascar, leading to concerns with green grabbing (Fairhead, Leach and Scoones, 2012) and displacement of local people to compensate for the destruction of highly biodiverse littoral rainforest for ilmenite mining (Seagle, 2012; Kill and Franchi, 2016).

Having briefly introduced offsetting in Europe, with special emphasis on the situation in Germany, the following section will outline the structure of the remainder of this thesis.

1.3.   Outline of this dissertation

This introduction is followed by a literature review, four substantive chapters and my conclusions. To develop the argument sketched out above, I first situate my work in the literature on biodiversity offsetting and neoliberal conservation. In the literature review, *Approaching biodiversity offsetting*, I identify three tendencies that continue to be dominant in much of this literature and which I hope to address in this thesis: firstly, an inclination to essentialise and naturalise 'the market', therewith reifying its power; grounded, secondly, in a states-versus-market dichotomy that continues to dominate much of the social sciences; and,

thirdly, the conflation of neoliberal theory and neoliberal practice. Lastly, I problematise the tendency to treat non-human nature, rather than 'the social', as the object of 'offsetting governance'.

Chapter three, *Making Europe's nature offsettable,* examines some of the key places and spaces of offset-making in Europe. I start by tracing the discourses, the ideologies and the knowledge systems that have been fundamental to the normalisation and institutionalisation of offsetting, followed by an analysis of what I term the *offsetting industry* and the *spectacular performance of conservation* in and through high-level natural capital and offsetting conferences. All three are brought together and explored as means to enact the *theatrics of legitimising destruction*.

Chapter four, *Introducing No Net Loss – an attempt to anchor offsetting in the European political economy,* shifts the focus to one political arena that has been important to the normalisation of offsetting in Europe: the policy processes led by the EC. The NNL initiative started as an ambitious project to establish offsetting in EU nature legislation, but – following civil society resistance and other reasons – has been watered down significantly. The initiative constitutes, I argue, an attempt to manage, flexibilise and weaken existing nature legislation in the EU, to secure access to land and capital by (European) firms, and to manage and diffuse dissent and resistance, effectively facilitating the management and flexibilisation of the very concept of limits to ecological destruction and accumulation.

In chapter five, *Green extractivism: a brief history of green mining and better coal*, I then 'zoom in' and examine the use of offsetting by one specific industry: the extractive sector. Through an analysis of the development of 'green mining' and 'sustainable coal', I situate offsetting as a governance mechanism to deal with the increasing levels of dissent and resistance against (large-scale) mining projects and the emergence of biodiversity 'risks' – as mobiliser for corporate conservation partnerships and other green economy initiatives.

Finally, in chapter six, *Licence to operate – licence to trash – licence to pacify? Biodiversity offsetting in the German lignite coal mining sector*, I analyse the use and productive power of offsets in an extractivist case study in the 'heart of Europe'. This chapter examines how offsets play out 'on the ground'; how they legitimise and invisibilise the social and ecological degradation and violence in the German Rhineland, through novel imaginaries of 'better nature' and 'better future'.

The *Conclusion* returns to the key themes raised in the dissertation and draws conclusions for our understandings of offsetting, extractivism, industrialism, corporate and state power, and

violence – and reflects on the need for an anti-statist, anti-authoritarian analysis to understand fundamental processes of domestication, alienation and domination of human and nonhuman nature.

1.4.   Politics of this dissertation

All scholarly work is political (and activist). The only relevant questions are whether the scholar engages in political/activist work consciously or unconsciously, and whether that work supports the status quo, or attempts to subvert it (for either regressive or progressive social change) (Waterston, 2006: 116-117).

Academics can be powerful agents in the contemporary political economy, and their role in the institutionalisation and normalisation of offsetting will be returned to in chapter two of this dissertation. Offsetting has relied (and continues to rely) on academic scholarship for the legitimacy it has needed to become a recognised policy tool, and projects frequently involve collaborations with (natural) scientists to do the mapping, surveying and modelling that offsetting is based on. Mining corporations – such as the German coal mine operator RWE – have historically relied on social science research in their management of resistance against their activities (e.g. Kirsch, 2002). At the same time, critical scholarship has played a crucial role in the *delegitimisation* of offsetting in public discourse and policy circles, making the European NNLi, for instance, much more difficult to implement than ever imagined by its inventors. Yet, critical scholarship can also run the danger of being co-opted and instrumentalised to strengthen its object of critique – just as many critiques of the EU carbon offsetting scheme have been used to correct "weaknesses" of the scheme (Paterson, 2009), therewith further legitimising offsetting and making critique increasingly difficult. "Resistance makes markets", Matthew Paterson argues:

> *with the effect of making them potentially more effective environmentally and to avoid the worst excesses of their socially unjust dynamics … But the effects here are of course contradictory. For many involved in opposing carbon markets, the point is to get rid of them, not make them work better. We are thus in the awkward position of shaping the form of something we may prefer didn't exist (2009: 244-250).*

Even critical scholarship can thus contribute – unintentionally and involuntarily – to the further reification and normalisation of systems of oppression and exploitation; whether these are framed as neoliberalism, capitalism, statism, patriarchy or any other system of hierarchy. So how can we overcome such 'complicity'?

This research project is driven by a strong normative commitment to radical social change as well as to anti-authoritarian analysis. What does that mean in terms of scholarship? Following

some of the (numerous) 'engaged scholars' who have not shied away from causing controversy around their activist engagement more recently, it involves taking sides; siding with those who seek

> *to produce a society wherein individuals may freely co-operate together as equals in every respect, not before a law or sovereign guarantee—which enter new forms of authority, imposed criteria of belonging, and rigid territorial bindings—but before themselves in solidarity and mutual respect (Springer, 2012: 1606).*

Stuart Kirsch, in his work on (and in support of) resistance against mining in Papua New Guinea, argues that "neutrality may not be possible in disputes between transnational corporations and indigenous communities because of structural inequalities that make it easier for corporations to take advantage of anthropological expertise and silence opposing voices" (2002: 175). The need to take sides, overcoming positivist mythologies of objectivity that maintain the status quo, goes hand in hand with a commitment not to make legible the structures of resistance, their ways of living and their ways of organising – i.e. to *join* the resistance, rather than to *research* the resistance. Jenny Pickerill and colleagues from the autonomous geographies collective argue that "too many academics are happy to build their careers on the backs of researching the oppressed", but fail to join them in their struggle (The autonomous geographies collective, 2010: 246, drawing on Kitchin and Hubbard).

Over the course of my PhD, this research has become more and more closely entangled with my everyday life of activism and struggle for social change, as the driving role of the mining industry became clear to me. I realised that the German coal industry – and particularly RWE, the coal mine operator in the Rhineland, where I grew up – have been involved in offsetting for many years, and that their nature restoration and compensation work has been fundamental in maintaining the legitimacy that has enabled them to continue coal mining and felling ancient forests so close to my own home. This thesis thus also draws on long-term involvement in anti-coal struggles in Germany, the Netherlands, and the UK, my engagement with, and emotional attachment to, the *Hambacher Forst*, as well as my own bodily lived experience of the violence exercised against those who challenge the corporate and state power that makes its continued destruction possible. Emotions – such as love and rage – are fundamental to radical politics (Fanon, 1963; Clough, 2012). This involves calling for and recognising the importance of "emotional connectivity and the politics of affinity as the fundamental basis upon which any lasting transformation might take place" (Springer, 2012: 1616). Research findings themselves are grounded in identities, approaches and emotions of the researcher (cf. Thien, 2005), and we have much to learn from feminist work on the importance of a care ethic in academia (Lawson,

2009). "Especially in environmental justice struggles", Marco Armiero and Salvatore de Rosa argue, "the body often becomes the first place of politicization, or we may say of subjectification; it literally becomes the space where people experience the oppression of capitalist relations and the opportunity for building resisting communities" (2017: 174) – whether in the form of direct action or academic writing, or both. In addition to rage, frustration and determination in response to this violence, the research has been shaped by the physical impressions and experiences of the forest that is being destroyed (and offset) – walking through, smelling, experiencing the forest – and being overwhelmed by the vast moon-like landscape of the mine that was once forest and that 'necessitates' this destruction.

1.5.   Strategising methodology

> *There is no greater fallacy than the belief that aims and purposes are one thing, while methods and tactics are another ... The means employed become, through individual habit and social practice, part and parcel of the final purpose; they influence it, modify it, and presently the aims and means become identical (Goldman, 2003/1923: 260–261).*

The motivations for my research have influenced my methodological and theoretical choices. Within critical scholarship, Claudia Aradau and Jef Huysmans argue, methods have been criticised for their "disciplining or 'hygienizing' function", with methodological debates around data gathering and processing techniques neutralising political disagreements and differences in views, leading critical debates to shift to epistemological and ontological terms (2014: 597; see also Knafo, 2010). Yet, methods are not 'neutral techniques' to organise data and design research, but the they 'enact worlds' that can disrupt the status quo; they are "instruments not for creating common ground, but for power struggles, competing enactments of worlds and/or creating disruptive positions in the worlds of international politics" (Aradau and Huysmans, 2014: 598). The resulting narratives can be powerful tools of resistance, challenging hegemonic discourses that serve to legitimise powerful interests.

The creation of these disruptive narratives involves denaturalising dominant market discourses and discarding, as much as possible, deductive reasoning about the nature of the world; about the nature of offsetting, of 'neoliberal conservation', and discourses around natural capital and ecosystem service thinking, instead paying attention to historical context and power (cf. Knafo, 2017). This historicisation should thus focus on locating the agency behind the structural power and violence that offsetting is embedded in, and helps invisibilise. "Although there is a lively debate about the agency of subalterns in the academic literature", Liza Grandia argues, "less discussed is the agency of elites or the complicity of intellectual groups that represent them" (2009: 723). The politics of this dissertation introduced above thus translate into a research

methodology that focuses on the "political reactions from above" (Geenen and Verweijen, 2017: 2), the agency of the powerful that responds to resistance from below. However, it also requires an analysis of this agency *situated within*, and *mobilising,* structural power relations in order not to end up with an overly structural analysis that may run the danger of reifying social reality and privilege – analytically – explanations of social stability and maintenance of status quo over explanations of social change (Sewell, 1982). Only by identifying this change, and the agency behind it, can we identify the points of fruitful resistance.

Consequently, my focus lies on the discourses, strategies, and interests of the actors and alliances promoting offsetting ideology and practice, in international forums, in policy processes, and in corporate decision making. Furthermore, it lies on the productive power of this agency[2]; situating it vis-à-vis resistance and exploring not just its mobilisation in response to critics, but also its role in the management of dissent. For a framework that helps me historicise offsetting *and* emphasise agency *without* dismissing structural power and violence, this dissertation draws on Sam Knafo's work on agency (2010), Rob Nixon's concept of slow violence (2011) and Peter Benson and Stuart Kirsch's focus on the dialectical relationship between corporations and their critics (2010) – expanded to include state actors. These three frameworks will be introduced in the next few sections.

The analysis of offsetting as *social technology of governance* through the lens of power necessitates overcoming the tendency of critical scholars to "oppose power to agency as if those with power have no agency and those with agency have no power" – wrongly conflating agency with resistance, thus reducing it "to a limited moment of the analysis" (Knafo, 2010: 494). Those who want to 'change the world', Knafo argues, thus always seem to be "'in waiting' for the moment when they will be empowered and finally able to change things" (2010: 494). This tendency is based on a very narrow (Marxist-inspired) view of 'revolution' and social change that relies on working towards a particular moment in history, as opposed to the association of revolution with prefiguration and formation of new relationships and institutions, alongside the erosion of relations of hierarchy and oppression. It also ignores that, firstly, even in the global state-system and neoliberal economic order, people are already enacting different worlds and futures through their resistance. Secondly, it is disempowering because it ignores the dialectical relationships between corporations, states and their critics (Kirsch, 2014); the ways in which corporate and state behaviour is shaped through resistance and the agency of

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[2] This use of the term 'productive power' is not to be confused with Foucauldian notions of power, which, James McCarthy and Scott Prudham argue, "remain somewhat diffuse for grappling with the class coalitions, interest-based politics, and scale-specific ecological dynamics we see as central to neoliberal experiments in reconfigurations of environmental governance" (2004: 280) – in other words, to identify 'winners and losers' in these processes.

the 'powerless'. This 'shaping' involves concessions to pacify resistance (such as welfare policies) but also the material and ideological resources that are being channelled into the management and policing of dissent. In his work on anti-mining struggles in Papua New Guinea, Stuart Kirsch suggests that, rather than studying corporations and resistance movements independently, "we need to study [them] within a single frame of analysis" (2014: 232). Following Kirsch's appeal to focus on this dialectical relationship avoids falling back into overly structuralist explanations of power and violence.

Sam Knafo's agency approach, however, reaches beyond an ontological focus on agency as a distinct *object* of research, which would not overcome the problem of dismissing or being blind to structures. But it recognises that structures are not God-given or pre-political, and neither are they determinant of how social reality unfolds: they are the product of agentive encounter and constitute the rules of the game, but do not determine how people navigate these rules (Konings, 2005: 108). Understanding these rules is crucial but should not guide analysis. Instead of simply dismissing structures, the agency approach involves prioritising agency *methodologically*, not *ontologically.* The latter rests on the assumption that structure and agency can be distinguished empirically*,* whereas the former "provides a principle of critical rigour to avoid reification ... it sets a methodological imperative that is central to the development of a proper historicist and critical approach" (Knafo, 2010: 494). This requires not *ignoring* structural power, but examining its productive dimensions *through the lens of agency*, and examining how they are established, invoked, and reproduced *through agency*. This focus is what makes it *methodological*.

Without assuming that corporations or states are seamless unities of intention and action, this approach can show how powerful corporate and state actors mobilise and instrumentalise power relations and establish offsets for particular purposes. This helps overcome the tendency to explain offsetting with reference to some inherent logic, and allows me to focus on what practices *do*, and what effects they have, rather than what they *say* (Konings, 2010: 743) – helping to position offsets as managerial governance tools. Powerful discourses that the biodiversity offsetting ideology is embedded in – around natural capital and ecosystem services – tend to be drawn upon to explain the development of offsetting policies or projects. Yet, such discourses have no inherent causal effects or significance "outside of the way they are historically implemented and exploited by specific agents" (Knafo, 2010: 513). That is why I employ the agency focus to understand how such discourses are invoked and mobilised and for what purpose – to understand, in other words, their "productive leverage" (Knafo, 2010: 505) – rather than simply accepting the power – or performativity – of such discourses. This further

helps overcome the danger of structural determination (Knafo, 2010) that may emerge in analyses of marketisation and financialisation of nature. Analysing offsetting as a product of agency, rather than structures, or structural 'laws' of capital accumulation (rejecting Polanyi-inspired inherent market logic and expansionary tendencies) not just helps de-naturalise such notions, but also helps demystify so-called market mechanisms. In practice, it involves analysing the multiple places and spaces of offset-making, and historicising and contextualising them to understand the how and the why. Adopting a multi-sited approach (cf. Marcus, 1995) enables me to link and to explore these multiple sites of offset-making, following the *offsetting industry* (introduced in chapter three) and the artefacts of offset-making (such as the case studies and PowerPoint presentations that travel across these sites of struggle). This re-focuses on the agents that are reproducing and that are empowered by such structures, and how this translates into change.

The next step then requires reconciling the methodological agency focus and conception of power with an analysis of state and corporate violence, epistemological violence and the 'slow violence' inherent in ecological degradation and climate change, industrialism and statism – in addition to the direct physical violence targeting those resisting the former. In his seminal work, *Slow violence and the environmentalism of the poor*, Rob Nixon explains:

> *By slow violence I mean a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all. Violence is customarily conceived as an event or action that is immediate in time, explosive and spectacular in space, and as erupting into instant sensational visibility. We need, I believe, to engage a different kind of violence, a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales. In so doing, we also need to engage the representational, narrative, and strategic challenges posed by the relative invisibility of slow violence (2011: 2).*

This violence is part of the rarely told story of biodiversity loss, coal mining and ecological degradation, in which many of the actors that I examine in this dissertation are complicit – extractive industries, policy makers and NGOs. It represents the other side of the coin of the violence that those who militantly resist processes of extractivism, such as in the *Hambacher Forst*, but especially in many places in the global South (where this violence is more direct, physical and life-threatening), are subjected to on a daily basis. Being slow and less visible does not mean it cannot be examined with a methodological agency focus. In fact, *because* it is more difficult to identify agency behind slow violence it is ever more important. Focussing on corporate and state strategies behind exploitative practices helps reorienting analysis away from suffering and toward harm (Benson and Kirsch, 2010: 475). A *structural* violence approach

could downplay the agency of corporate and state actors as agents who are responsible for social and ecological degradation, and may lead to "an approach that socializes suffering to such a degree that an entire social structure or historical trajectory can be described as the responsible agent" (Farmer in Benson and Kirsch, 2010: 475). The methodological agency approach can help make this agency visible, laying bare how power and violence are exercised and affecting human and nonhuman nature – offering a promising starting point for critical intellectual and political engagement.

To sum up, pointing to the agency involved in the normalisation and institutionalisation of offsetting, this approach helps, firstly, to 'denaturalise' the concepts and categories that are used to describe (and therefore possibly further reify) social reality; secondly, to go beyond analyses of marketisation and financialisation (explored in the next chapter); and thirdly, to open space for resistance and radical contestation on both epistemic/intellectual and practical terms. The latter, in turn, involves a refusal to accept hegemonic narratives and facilitates the creation of much more powerful counter-narratives that can go beyond engaging with those in power in their own terms. Instead, it allows for creative thinking and 'dreaming' about alternatives. It further allows putting forward more radical demands and ideas around alternative futures and natures, grounded in non-market and non-neoliberal principles of solidarity and mutual aid. It goes hand in hand with the refusal to accept any form of hierarchy of ideas, any dominant framework of thought, and any restrictions on the living and working towards such alternative futures. In other words, it opens up the space for radical prefigurative politics and thinking.

1.6.   Methods

The historicisation and contextualisation of offsetting, the agency approach, and the emphasis on the dialectical relationships require, firstly, investigating the narratives, interests and experiences of the actors involved in offsetting in different places; secondly, witnessing the (re)production of these discourses in places and spaces of offset-making; and thirdly, studying the testimonies and documentation of the history of interactions between the mining industry, conservation organisations and the state, articulated in the offsetting-extraction nexus. My methodology thus consists of

- 46 semi-structured qualitative interviews (to investigate the dynamics inside the NNL working group, to understand better the work of biodiversity consultants, the work of RWE and the Better Coal initiative, and the violence and power exercised by corporate and state

representatives on the resistance movement in the Rhineland, as well as how it is shaped by
the latter) (Annex 1)

- Participant observation in 12 (high-level) conferences and meetings (to examine the
  hegemonic discourses, narratives and imaginaries around biodiversity offsetting and natural
  capital) (Annex 2)
- Participant observation, grounded in my own experiences of the resistance and the
  corporate and state responses in and around the *Hambacher Forst* (to understand the
  technologies of governance employed by corporate and state actors) (Annex 3)
- Close readings of policy documents, media articles, reports, and legal texts

Interviews were carried out between 2014 and 2017, with various actors in Brussels, London,
the Netherlands and Germany (Annex 1). Interviews have been coded and anonymised. All
translations of German interviews and sources are my own. To understand the EU NNLi, I spoke
to members of the NNL working group and others involved with the initiative: biodiversity
consultants, members of the EC and national ministries, civil society representatives and
industry lobbyists. These interviews usually lasted between 45 and 90 minutes and took place in
offices, cafes and restaurants. Nine interviews were conducted via Skype/telephone. To
understand the workings of offsetting in the German Rhineland, I conducted formal and
countless informal interviews in and around the coal mine and the offset site: with employees
of coal mine operator RWE, including its recultivation centre and the Public Relations (PR) and
Corporate Social Responsibility (CSR) departments, the Bettercoal initiative, local residents and
members of the resistance movement, activists living in the *Hambacher Forst* and civil servants.
In addition, I interviewed – and spoke to informally – a number of members of the European-
level alliance that has been working to oppose the 'Financialisation of Nature' and engaged with
the EU policy process. Most of these individuals work for grassroots organisations or
independently. Furthermore, I had numerous informal chats with consultants, government
officials, RWE – but also conservation and social justice organisations – during conferences and
events. Therefore, no research participants have been identified in this thesis, and my
descriptions remain deliberately vague.

The semi-structured interviews were complemented by participant observation and "event
ethnography" (Brosius and Campbell, 2010: 245) at 12 conferences and meetings (Annex 2).
High-profile meetings, Kenneth MacDonald argues, are central new fields of conservation and
cultural and social reproduction, "where organisational agency can be seen to work towards
achieving and articulating the configuration of a new organisational order in which the interests
of capital accumulation receive an unparalleled degree of access and consideration in

conservation planning and practice" (2010b: 271). In these meetings personal ties are formed, partnerships are initiated, and ideas are spread. These high-profile meetings are complimented by industry events and campaign meetings.

In addition to these events, I attended a number of (guided and non-guided) field visits into and around the Hambach coal mine and *Sophienhöhe*, its main offsetting site, the *Hambacher Forst*, a number of information centres and viewpoints, and the occupation (Annex 3).

The research on RWE and the Hambach coal mine further draws on long-term involvement with the resistance movement and my experiences within it, as well as having grown up close to the mine, in an area that is shaped – politically, physically and culturally – by RWE's mining operations.

Finally, I engaged in close reading of a wide range of policy documents, legal texts, Freedom of Information requests, civil society reports and academic literature around offsetting. The Freedom of Information requests asked for information related to meetings and communication involving EC officials about the NNLi and the EC's Natural Capital Financing Facility and are publicly available on the Ask-the-EU website (AsktheEU, 2016).

1.7.   Some reflections on positionality and ethics

Struggles over offsetting involve irresolvable value struggles, and negotiations over the assumed (ir)rationality of biodiversity offsetting are thus located firmly within political and ideological arenas (Sullivan and Hannis, 2015: 162).

My fieldwork began at the first Natural Capital forum in Edinburgh in 2013, shortly after I started my PhD, and ended with the Sustainable Coal forum in 2017. Just as most research projects, it involved a number of unexpected turns and changes to my research outline – it was only when I had conducted much of the historical work (chapter five) that I realised the crucial importance of the mining industry and decided to analyse the offsetting activities of RWE, so close to home. That raised ethical questions that I had not considered previously: Could (should) I be researching the activities and strategies of a company that I was campaigning against at the same time, that I felt so strongly about; a company that I have taken direct action against in the past and that has taken legal action against me? Could I provide a fair representation of their work, given my own experiences of police and corporate violence in defence of RWE's activities on my own body, and having been hospitalised following one such encounter? If anything, I decided, that was ever more reason to examine their activities systematically, to share these results with fellow campaigners and make them publicly available. Relationships and research findings are influenced by the identities of those who study them (Arendell, 1997) – what

matters, therefore, is being honest about these identities, disclosing my activist involvement, and being transparent about the politics involved in this research.

The second dilemma – relevant, to a much lesser degree, also to the high-level conferences I attended, and other interviews I conducted – relates to the way I present myself vis-à-vis RWE interviewees and disclosed my positionality. Throughout my fieldwork engagement I never hid my critical position vis-à-vis the company, its coal mining activities and its nature restoration work. In fact, I believe that was one of the reasons my interview partners were willing to speak to me: to convince me of the valuable nature work the company engages in. I remain grateful for the time they spent answering my questions, and for the continued good contact with their nature restoration team. Many of the individuals I spoke to work hard and mean well, and are (rightly) proud of their restoration success and creation of local biodiversity in restored mining areas – and happy to show me this work. At times, it was difficult to 'zoom back out' and not forget about the larger context within which this nature restoration work takes place – and why it is needed in the first place. Conducting research within the corporation, Stuart Kirsch argues, "poses a risk of co-optation, because the tendency of ethnographers to emphasize with the subjects of their research may influence their findings or temper their critical perspective" (2014: 12). Such feelings were quickly overcome when the discussion came to the resistance against the mine. Particularly during the guided tours by RWE employees, my status as *observer* was repeatedly tested when confronted with abusive comments about those who were resisting RWE's operations: the forest defenders who take great risk and make huge personal sacrifices to stop the company's destruction of the ancient forest – people I care about, some of them my friends, and people with whom I shared so much more than my research participants. Witnessing the hatred towards activists and the throwaway comments by RWE employees and local politicians, wishing for their physical harm, made it difficult not to respond.

Interviews about the EU NNLi, on the other hand, were less contentious, although also shaped by disagreement. These interviewees were much less antagonistic towards campaigners and critics – many even sympathetic to some of their concerns – but usually fended off critiques as 'without evidence', and with the ever-powerful 'better-than-nothing' argument. My identity as white woman in her early thirties may have helped gain access with some interviewees, but also led – on a couple of occasions – to overly patronising responses by senior male interviewees. My identity as activist was helpful in approaching campaigners whom I had met at previous occasions – both on the EU level and in and around the *Hambacher Forst*. The research would have been much less fruitful and more difficult had I not had extensive pre-knowledge of the

area, previous contacts, as well as – interestingly – a certain legitimacy derived from my upbringing close to the mine.

Despite the value of the formal interviews, some of the informal hallway conversations proved even more productive – although, unfortunately, I was usually not able to take notes and record powerful responses. At the same time, some of the most memorable moments – where the corporate and state power I that studied became most visible – were only indirectly related to my research. One such moment, which testified to this very power, came up at an event by the London Mining Network where one of the invitees, a Malagasy farmer who had been expelled from his land by Rio Tinto, was refused a visa following intervention from Rio Tinto. Lastly, some of the most interesting (and fun) experiences involved long bike rides around the mining area; following RWE's cycling infrastructure, large parts of which were marked with protest graffiti against both RWE and the state; the confrontation with RWE's enormous power stations during lightning and thunderstorms; cycling through the empty ghost villages that are waiting to be dug up for the 'migrating mine'; and lastly, encountering refugee accommodation on RWE's territory next to their power station (all figure 1, clockwise, starting top left).

Figure 1 Rhinish coal region: field work on bicycle (own photo); approaching RWE's power station (own photo); ghost village Immerath (Deicke, 2016), refugee accommodation at RWE's power station (own photo).

2. Approaching biodiversity offsets: from financialisation to technology of governance

This chapter engages with the neoliberal conservation and financialisation of nature debates in which biodiversity offsetting is embedded. I identify the contributions of these literatures as well as points of departure where my approach differs. Specifically, I point out three ways in which my analysis departs from previous work on offsetting and the neoliberalisation of nature: firstly, the over-emphasis on the marketisation aspect of offsetting that may risk essentialising and naturalising the market; secondly, the conceptualisation of the role of the state, often grounded in a problematic state-market dichotomy; and thirdly, the conflation of neoliberal theory and practice. I then outline how my framework aims to address these three points helps me reconceptualise offsetting as *social technology of governance* in the remainder of thesis.

Biodiversity offsetting has emerged in the last decades not only as an element in corporate sustainability strategies and policy circles, but also – rather belatedly – in the academic literature. Unlike other so-called 'market-based' instruments such as carbon offsetting or Payment for Ecosystem schemes, academic researchers were not the driving force behind the invention and pioneering of this form of offsetting (Lave and Robertson, 2017; Calvet, Napoléone, and Salles, 2015). Indeed, most of the highly-cited literature in support of biodiversity offsetting schemes has come from a relatively small number of consultants and practitioners (sometimes in collaboration with academics) who are members of the *offsetting industry* that I introduce in chapter three. As Rebecca Lave and Morgan Robertson argue, consultants and other "private sector scientists" with financial interests in offsetting have "successfully claimed the mantle of scientific authority" (2017: 230, citing Briske et al.; see also Lave, 2012, 2014) and contributed to its 'scientific legitimacy' and that of the adequacy and integrity of the metrics and currencies used in offsetting (Walker et al., 2009; Lockhart, 2015). While lacking the traditional academic recognition associated with PhD titles or university positions, they publish in academic journals and are widely regarded as "authoritative voices" (Lave and Robertson, 2017: 230), backed up by institutionalised offsetting interests such as Forest Trends (introduced below) and the Business and Biodiversity Offsetting Programme (BBOP).[3]

While environmental economists and ecologists have not been the driving force behind the normalisation and institutionalisation of offsetting, they have provided much of the groundwork

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[3] BBOP, founded by Forest Trends, is a coalition between corporate, financial, governmental and civil society actors with the aim to promote offsetting, and possibly the most important driving force behind offsetting in Europe. It will be introduced in more detail in chapter three.

that has made offsetting a legitimate policy option and corporate strategy, and they have developed many of the tools and methodologies that make aspects of biodiversity commensurable and offsettable. At the same time, natural and social scientists have pointed to the 'flaws' of offsetting practice (e.g. Bull et al., 2013; Bull, Lloyd and Strange, 2017; Thébaud et al., 2015; Moreno-Mateos et al., 2015). Accepting the general principle and the use of offsets, several such authors have pointed to problems with its implementation in practice, particularly related to the ecological principles that are needed to make offsetting 'work' (Kremen, 2005; Bruggeman et al., 2005; Moilanen et al., 2009; Bull et al., 2013; Gardner et al., 2013; Bekessy et al., 2010) and the "true costs of offsetting" (Moreno-Mateos et al., 2015). They show that No Net Loss (NNL) aims are rarely delivered (Maron et al., 2012; Curran, Hellweg and Beck, 2014) and that restoration projects to offset for biodiversity loss frequently fail to meet their stated objectives (Moilanen et al., 2009; Palmer and Filoso, 2009). Malika Virah-Sawmy and colleagues, for instance, illustrate the "arbitrariness" of habitat value measurements in Australia, which ignore the "real-world challenges in compensating losses in an effective and lasting manner" (2014: 61). Others criticise problems with time lags between habitat loss and restoration, duration and lack of permanence, scale (the distance between impact and compensation sites), sites (in-kind versus out-of-kind compensation, e.g. tiger habitat compensated through the creation of more tiger habitat versus chimpanzee habitat), and lack of independent (third-party) monitoring, enforcement and long-term management (Lave and Robertson, 2017; Curran, Hellweg and Beck, 2014; Maron et al., 2012; Gonçalves et al., 2015; Bull et al., 2013). They have developed theoretical principles of 'good practice' such as site proximity (Pilgrim et al., 2013), multipliers to account for restoration uncertainties and time discounting (Moilanen et al., 2009; Bull et al., 2016; Bull, Lloyd and Strange, 2017) and counterfactual scenarios and dynamic baselines based on 'biodiversity trends' (Bull et al., 2014). Others still have linked these critiques to social (in)equity due to the distances between impact and compensation sites (Ruhl and Salzman, 2006; BenDor and Brozovic, 2007). James Salzman and J. B. Ruhl point to the specific challenges of biodiversity offsetting (compared to, for instance, pollution trading) due to the inherent difficulties of agreeing on biodiversity trading units caused by the lack of fungibility, requiring stricter trading rules that are alleged to reduce market efficiency (2000; see also Walker et al., 2009).

These contributions are valuable because they identify many of the internal tensions and contradictions within offsetting practice, and contribute to the public de-legitimisation of offsetting. Yet such work has also enabled offsetters to 'learn from their mistakes', strengthening offsetting ideology by pointing out – but also offering solutions to – major flaws;

encouraging the use of 'better metrics' or 'more sophisticated measurement technologies' and closer monitoring. This has led to absurd statements such as "Metrics must incorporate irreplaceability"[4] (Pressey et al., cited in Bekessy, 2010: 154). While critical of the 'arbitrary' nature of offsetting baselines, for instance, Shuling Yu and colleagues then go on to develop *better* mathematical models to "quantify the loss from coastal land reclamation and gain from offsets" (2017: 35). Coralie Calvet, Claude Napoléone, and Jean-Michel Salles, after having shown the limits to substitutability and the risk of economic objectives prevailing over ecological objectives, argue that "one of the main ways to improve the BO [biodiversity offsetting] system is to *better* incorporate scientific contributions and social representation of biodiversity" and recommend that "the scientific community should continue to investigate BO both in the natural and in the social sciences, providing both ecological and economics insights" (2014: 7372, emphasis added). Arguably, such secondary elaborations can have the effect of maintaining the offsetting paradigm; of making offsetting 'a little less absurd' whilst hiding the problematic premises and effects it engenders, making offsetting projects or policies more difficult to challenge and resist.

At the same time, critical researchers engaging in the Financialisation of Nature (FoN) debate have picked apart and laid bare many of the problematic underlying assumptions of offsetting, the politics involved, and the 'anti-scientific' nature of offsetting in practice. Rooted mainly in critical geography literature, they have built on work on 'neoliberalising nature(s)' (Castree, 2008a, 2008b; Bakker, 2010; Heynen et al., 2007; Mansfield, 2008; McCarthy and Prudham, 2004), the privatisation of natural resources (e.g. Mansfield, 2004; Bakker, 2004, 2005) and what Kathleen McAfee has famously coined "selling nature to save it" (1999). This body of work covers the effects of 'neoliberalisation' on the ground in a wide variety of places, regions and countries (Castree, 2008a) – including, for instance, the introduction of fishery quota systems as 'marketisation and enclosure' (Mansfield, 2004); the introductions of the 'right to pollute' in North America (McCarthy, 2004); the 'regulatory rollback' in state practices of water testing in Canada (Prudham, 2004); the privatisation of mineral resources in Peru (Bury, 2004), water in Britain (Bakker, 2004; 2005) and forests in the US (Heynen and Perkins, 2005). On the example of water, forest, minerals and other natural resources, authors have criticised the renewed and intensifying commodification, marketisation and financialisation of nature (e.g. Heynen and Robbins, 2005), and new wave of enclosures (Robbins and Luginbuhl, 2006). This work has contributed to an impressive body of literature around what Bram Büscher and colleagues have

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[4] The statement continues: "to avoid the trap of allocating low value to degraded habitat even if it is representative of a highly threatened ecological community" (Bekessy et al. 2010: 154).

coined 'neoliberal conservation' (Büscher et al., 2012; Sullivan, 2006; Igoe, 2010; Büscher, 2010; Brockington and Duffy, 2010; Brockington, Duffy and Igoe, 2008; Holmes, 2012; Liverman, 2004; Milne and Adams, 2012; McElwee, 2012; Pokorny et al., 2010; Büscher and Dressler, 2007; Igoe and Brockington, 2007; Igoe, Neves, and Brockington, 2010).

Students of neoliberal conservation criticise the "inappropriateness of the analytical categories of neoclassical economics and neoliberalism, which separate nature into discrete and exchangeable units" (Lockhart, 2015: 336). Sian Sullivan argues that the "spectacular financialization of environmental conservation" has created new investment frontiers, turning economic and ecological crises into opportunities and infusing conservation practice with "financial categories" that produce new kinds of "human-with-nature relationships" (2013a: 198). Evangelia Apostolopoulou and William Adams analyse the role of offsetting in enabling a social and spatial "reterritorialization of socionatures" (2017). This has been facilitated by what I analyse as *spectacularisation of conservation* in chapter three. The performative dimensions of spectacle (Brockington and Duffy, 2010; Igoe, 2010, 2013) and ritual (Turner, 1969) have "given rise to an industry that sells the elite performance of sustainability as these dynamics and mechanisms enmesh distant investors and nature consumers in idealized 'local' conservation relations and landscapes" (Huff and Brock, 2017; see also Huff and Tonui, 2017). Spectacle, Ashen Ruins suggests, "adapts with technology" (2002: 5), incorporating novel and 'innovative' conservation instruments, and can go hand in hand with the increasing militarisation and securitisation of conservation (Cavanagh and Benjaminsen, 2014; Dunlap and Fairhead, 2014; Marijnen and Verweijen, 2016; Büscher and Davidov, 2013; Brock and Dunlap, 2018). This body of work has been fundamental to exposing the inherent reductionism and contradictions in so-called market-based or neoliberal conservation approaches and the contested knowledges about nature that cannot be separated from "place-specific ecologies", cultural practices and power relations (McAfee, 2003: 203).

2.1.   Offsetting nature – premises and critical approaches

Grounded in the literature explored above, a growing number of authors have engaged in fruitful investigation and critique of offsetting. Morgan Robertson (2000, 2004, 2006, 2012) explores US American wetland banking and analyses how bankers, regulators and ecologists negotiate political conflicts which cannot be reduced to a "matter of economics" (2009: 36). He illustrates the scientific-political work that goes into the construction of nature as commodity: "The 'red-legged frog habitat' service", he argues, "is not out there waiting; rather, it is fundamentally defined as a service in the process of its marketing and sale" (2012: 387).

Morgan Robertson continues to show the political importance of classifications and categorisations and argues that scientific disputes around the 'offsettable' have become essential to their commodification and the creation of value (2006: 368). "[E]cosystem science", he argues, "increasingly serves as a metrical technology for the commodification of ecosystem services" (2006: 368).

Based on extensive field research, Sian Sullivan analyses planning negotiations and policy proposals at connected sites of nuclear power production in the UK and uranium extraction in Namibia, where offsets are used to fulfil requirements of "off-site mitigation of environmental harm at points of both extraction and 'consumption' of uranium" (2013b: 80). She illustrates how offsets contribute to green washing of nuclear power and the associated extraction of uranium; "thereby disavowing damages to biodiversity whilst intensifying radioactive threat at these different nodes of the commodity circuit" (2013b: 87). These practices are part and parcel, she argues, of the financialisation of discourses and environmental conservation practices, the monetisation and marketisation of nonhuman natures and processes of value creation. This also involves the marketing of conservation through representation of ecological crisis, media performances and large-scale conservation events as 'conservation spectacle'. She traces financialisation of conservation discourse and practice by means of four "interconnected and heuristically relevant domains": "nature finance" (through the incorporation of conservation into financial investment opportunities and other mechanisms), "nature work" (through the framing of nature as service provider for human needs and associated valuation projects), "nature banking" (through the reconstitution of nature as natural capital to be (profitably) managed) and "nature derivatives" (through the establishment of biodiversity derivatives that promise payments from bets on its future value to hedge against unpredictable events, related to securitisation of risk of species extinction as tradable commodity with speculative returns) (Sullivan, 2013a: 203). Financialisation, she argues, here is "extending possibilities for nature's speculative release into the realm of circulating money in its new universal form of derivatives" (2013a: 208). Elsewhere, she theorises the abstraction, distancing, flattening and dematerialisation of nature that is reinforcing the nature-culture split underlying offsetting (2010); the (anti-)ecological assumptions guiding "calculations of complex ecological assemblages so that they can become biodiversity offsets" and the "intensified distributions of new environmental values with which biodiversity offsets may be associated" (2013b: 80). She explores the technical and evaluative processes that make nature 'legible' as natural capital and constitute the 'economisation' of human and nonhuman nature (Sullivan, 2014, 2017, *in press*) and the ontological dimensions and politics involved in the remaking of

nature as natural capital, "draw[ing] attention to the multiplicitous ways in which value(s) for nature(s) are fabricated rather than found" (Sullivan, forthcoming, 2017b; Sullivan and Hannis, 2017; see also Dauguet, 2015). These values circulate across time and space, Louise Carver has shown in relation to the British offsetting scheme (2015).

Examining the politics of market-making, Evangelia Apostolopoulou and William Adams identify four ways in which offsetting reframes nonhuman nature (conservation): into exchangeable biodiversity units, as de-localised, as monetarily valuable and compatible with economic growth (2015a). Crucial to these processes are the application and the politics of technical calculative devices that are used to quantify biodiversity value at impact and offset sites in the UK (Carver, 2015; Carver and Sullivan, 2017; Sullivan and Hannis, 2017), including the accounting practices to incorporate natural capital into national and corporate annual accounts (Sullivan and Hannis, 2017). Louise Carver and Sian Sullivan illustrate the creative use and modification of offsetting metrics for political compromise at the cost of conservation gains in England, and the impact of financial interests on complex impact-gain calculations (2017). These metrics that are fundamental to creating (the illusion of) equivalence and fungibility between environmental health and harm in different places, as well as the accounting frameworks that are used to calculate biodiversity values have been much subject of critique (Robertson, 2006, 2012; Sullivan, 2009, 2010, 2012, 2013b; Corson and MacDonald, 2012). Andy Lockhart explores the political problems and contradictions that emerged in the attempt of the British government to "roll out" offsetting (2015). He explores issues around the political feasibility to deal with, and overcome, the inherent tensions in offsetting and argues that the questions critics should be asking are "not so much over the technical feasibility of offsetting, but the extent to which the technical complexities can be satisfactorily worked through the political milieu in which they are embedded and constituted" (2015: 341). By means of a French case study, Benoît Dauguet (2015) shows how biodiversity is made fungible and commensurable, and turned into a commodity, through its re-framing as ecosystem function.

Through an analysis of the public consultation that formed part of the English policy process to set up offsetting, Sian Sullivan and Mike Hannis illustrate the irreconcilable value struggles involved in offsetting (2015), grounded in differences in ontology (Sullivan, 2013c) and values (O'Neill, 1997); and how it facilitates development through its incorporation in the English planning system (Hannis and Sullivan, 2012), while Evangelia Apostolopoulou and William Adams (2017) theorise offsetting in the UK in relation to processes of capitalist urbanisation. US wetland mitigation banking has further been discussed by Morgan Robertson (2004, 2006, 2012) and Morgan Robertson and Nicholas Hayden (2008); US species banking has been

analysed by Jessica Fox and Anamaria Nino-Murcia (2005) and Jamie Pawliczek and Sian Sullivan (2011). Helen Tregidga (2013) draws on Foucault's governmentality approach to analyse biodiversity *accounting* as a regime of practice, examining the invisible rationality behind it by means of a New Zealand case study. Others have illustrated how offsetting serves to position corporations as 'saviours of biodiversity' in the face of 'unsustainable locals' (Seagle, 2012; Brock, 2015). These two studies are some of the few analyses of project offsets that are not part of a national regulatory framework (see Benabou, 2014, for an examination of the international development of voluntary offsets through an economic sociology framework of market overflow and framing). Caroline Seagle shows how Rio Tinto frames local traditional practices as 'irrational' and 'unsustainable' in order to legitimise the assumption of a declining biodiversity baseline and therewith allowing for the protection of forest to 'offset' for the disastrous impacts of its ilmenite mine in Southeast Madagascar (2012). Marine Maron and colleagues illustrate how the unrealistic (yet politically useful) use of baselines in offsetting for 'avoided deforestation' and the construction of counterfactual scenarios can 'lock-in' biodiversity loss (2015), while David Moreno-Mateos and colleagues argue, similarly, that "the design of offset policies may worsen the present state of biodiversity and existing policies to protect it" (2015: 553).

This literature has generated a very productive and important debate on the processes of, and problems with, the so-called marketisation and financialisation of nature, and it has engaged with fundamental changes in the political economy of conservation that are usually associated with neoliberal capitalism. While drawing on, and being very sympathetic to, much of this diverse body of work, my analysis departs from some of its underlying assumptions and conceptual understandings. These points of departure are partly grounded in my understanding of neoliberalism as theory and as managerial practice. Having given a brief overview of some of the main contributions of the critical literature on offsetting, in the following section, I draw out this understanding of neoliberalism, its history and its view of markets. This section will then help me anchor the three points of departure of my own research vis-à-vis the FoN literature below.

2.2.   Exploring 'neoliberalism' and its history

The difficulty of defining – and the tendency to overuse – the term neoliberalism has been widely recognised (Springer and Birch, 2016; Davies, 2016). It is due to the very impossibility to narrow it down to a short and concise definition (Mirowski, 2009) that the term is used in partly overlapping and partly contradictory ways (Ferguson, 2010). Neoliberalism "remains a major

ideology that is poorly understood but, curiously, draws some of its prodigious strength from that obscurity", Dieter Plehwe has argued (2009: 3). Even in the critical political economy literature, neoliberalism continues to be primarily associated with, or reduced to, free market thinking and minimal state intervention (e.g. Thorsen and Lie, 2006), or deregulation, privatisation and liberalisation (Graefe, 2005; Springer, 2016). "With very rare exceptions", Angela Mitropoulos has argued, "those who use this term have engaged a rigorously selective reading of both its proponents and the world around them so as to claim that neoliberalism involves the extensive rule of free markets, deregulation, open borders, and the pursuit of private self-interest" (2016). Not only does this not resemble neoliberalism *in practice*, but it does not adequately represent different schools of neoliberal *thought* either – which feeds into the (mis-)conceptualisation of biodiversity offsetting as market instrument which I analyse below.

It makes sense to distinguish between neoliberal *theory/ideology* and *practice* (Ferguson, 2010), or rather, between neoliberalism as a "*historical thought collective*" (Plehwe, 2009: 4, emphasis added), which pioneered and propagated neoliberal theory, and a *managerial practice* to engineer, limit and steer competition and re-structure social, political and economic life. Neoliberals themselves "rarely made a fetish of the distinction between theory and practice" (Mirowski, 2009: 427)[5]. The neoliberal theory – or ideology – of this historical thought collectively most famously originated in the Mont Pelerin Society (Plehwe, 2009; Mirowski and Plehwe, 2009, eds.), though the term itself was coined at the Colloque Walter Lippmann in Paris in 1938 (Mirowski and Plehwe, 2009). It was by nature a dynamic and reactionary project without much 'essence'; "a quest for alternative intellectual resources to revive a moribund political project... flexible in its intellectual commitments, oriented primarily toward forging some new doctrines that might capture the imaginations of future generations" (Plehwe, 2009: 15). Philip Mirowski has warned of identifying neoliberal theory exclusively with *economic theory* – neoliberal thinkers engaged with a variety of academic disciplines, and their object of interest was social, political and economic – instead viewing it as a 'pluralist organism' established in opposition to laissez-faire classical liberalism, social welfare liberalism, and socialism (2009). The goal was to restructure the fabric and collective imaginary of society beyond 'economics' (see Larner, 2000, drawing on Hall and Brodie). This is particularly important for a deeper understanding of the economistic rationality underlying the reductionist mode of valuation and conceptualisation of 'nature' that allows for the double-process of

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[5] Some have distinguished between / conceptualised as three overlapping yet distinct struggles, intellectual, bureaucratic and political (Mudge, 2008), or separation into ideology, policy and governmentality (Larner, 2000)

abstraction in which offsetting is grounded (explored in chapter 3). This rationality plays out and becomes spectacularise in the places and spaces of offset-making, in the collective imagination and shared understanding of conservationists, corporate leaders and environmental accountants and consultants, *outside* of (environmental) economic theory.

Defining characteristics of the neoliberal project, according to the Mont Pelerin Society, include the belief that the conditions for the existence of a good society – including individual freedom – are not 'natural' and need to be socially constructed (opposing 'laissez-affair' thinking and openly interventionist), including through the re-definition of the shape and functions of the state (Mirowski, 2009). The 'market' is considered an "information processor", according to Friedrich Hayek, a social construct rather than a natural occurrence, as often assumed (ibid).[6] For the purposes of public communication and "sloganeering", however, neoliberals argued that "market society must be treated as a 'natural' and inexorable state of humankind" (ibid: 435), often promoted with natural science metaphors.[7] This understanding is important in order to avoid explaining the development of biodiversity offsetting in reference to an inherent market logic and roll-out of markets, as will be critiqued in the next section (2.3). The conceptualisation of biodiversity markets as the outcome of an inherent market logic, in other words, thus cannot explained with reference to neoliberal theory – *or* practise.

In *practice*, neoliberalism is much more closely related to particular kind of managerialism, Sam Knafo and colleagues have argued, for specific political economic goals (2018). Andrew Gamble explains that the "commitment to technocratic managerialism was much more apparent than any faith in neo-liberal principles about trusting in markets to deliver. Markets were used as managerial tools in the pursuit of publicly determined objectives" (2006: 31). This is the governance *through* market(instrument)s that will be explored and problematised in the next section (2.3). Sam Knafo and colleagues explain that neoliberal restructuring was grounded in a framework of optimisation intended to empower managers rather than roll out market-like mechanisms (2018). Similarly, Will Davies has argued that the role of managerialism was "to *anchor modernity in the market*, that is, to make economics the main measure of progress and reason. Economics is amplified by neoliberal intellectuals, to address problems that might otherwise have been viewed as political or sociological" (2016). The emphasis on rationality and

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[6] In parallel to the Mont Pelerin Society, a specific "Chicago version of young and radical neoliberalism" developed during the 1950s, which was much more trusting of corporations and corporate leaders and sceptical of states' "lack of economic understanding" (Plehwe, 2009: 30-31).

[7] Such narratives were framed around choice and freedom, in accordance with "a neoclassical version of rationality and motives of ineffable self-interest" (Mirowski, 2009: 437). Inequalities were seen as a necessary foundation for society and force for progress.

modernity highlights the logic that underlies the re-structuring of governance with managerial tools and technologies of governance, as explored in chapters 3 and 4. It further, once again, helps understand the offsetting rationality necessary for the abstraction and commensuration of nature underlying offsetting.

The very term neoliberalism is a 'colonising process', Will Davies has argued (2016), employed not to solve narrowly economic problems, but to extend them to address fundamental problems of modernity: "The central feature of modernity … is that we cannot know in advance what will work, who to be, or what to invest in, but nor can we really duck such choices either" (Davies, 2016). Sam Knafo and colleagues outline the managerial innovations and bureaucratic tools – such as audits – that are part of this restructuring (2018; see also Gamble, 2006). This points to the importance of understanding the role of such tools – including offsets – in risk management and as social technologies of governance.

Neoliberal practice is thus more adequately characterised by its concern with management, control and (violent) disciplining, or "the creation, legitimation and consolidation of new relations of control" (Konings, 2010: 742). This is visible in its contemporary manifestation in combination with, for instance, militarisation of borders, criminalisation of dissent and the regulation of sexuality and reproduction (Mitropoulos, 2016). The militarisation of conservation (Büscher and Ramutsindela, 2016) and rise of green violence (Cavanagh and Benhaminsen, 2014) might be added. These are neither coincidental nor novel or contradictory, Angela Mitropoulos argues (2016) – from its beginning, neoliberalism went hand in hand with the control and preservation of a particular – gendered and racialised – social order. Melinda Cooper has shown that the neoliberal success story should be understood as a response to the breakdown of the Fordist family wage, which had normalised and institutionalised particular gender and sexual relationships, with (white) men as (unevenly waged) breadwinners, white women relegated to the (unpaid) domestic sphere, and African American women to "agricultural and domestic labor in the service of white households" (2016: 8). The breakdown of the Fordist family wage thus constituted a threat to the idea of the white, heterosexual nuclear family. In addition to the changing gender and race composition of the work force, at the same time, neoliberal practice was shaped in response to the social and economic upheavals of the 1960s and 70s; civil rights movements and student radicalism (Cooper, 2016). It merged with a new social conservatism in the 1970s in the US in what Melinda Cooper calls "a convergent perception of crisis" (2016: 20) that was triggered by liberation movements demanding politics of redistribution, challenging sexual division of labour and sexual normativity. Together, neoconservatism and neoliberalism thus "'united' not to dismantle the

welfare state and introduce so-called free markets, but to reshape it in accordance with neo-conservative family and racial values" (Cooper, 2017: 314; Kristol, 1983).

The regulation, control and management of race, gender, sexuality and – increasingly, and intersecting – resistance, is inherently violent, and demands law and order regulation, criminalisation and policing; in other words the proliferation of unfreedoms. The violence associated with the disciplining and policing of this resistance has intensified since the 1990s. Neoliberal globalisation was always contested locally. Structural adjustment programmes and large-scale 'development projects' had long been triggering resistance in the global South; transnational solidarity movements formed in the 1980s and 1990s, developing and sharing critiques of neoliberal globalisation in collaboration with 'organic intellectuals' (Birchfield and Freyberg-Inan, 2005, drawing on the work of Antonio Gramsci). In the global North, resistance movements have grown since the time of the so-called 'Battle of Seattle' in 1999 (Smith, 2001; Wainwright, 2007), followed by demonstrations with thousands of people at the World Economic Forums in Melbourne and Davos, against the International Monetary Fund and World Bank, the Quebec summit, discussions for the Free Trade Agreement of the Americas, the EU gathering in Gothenburg and the G8 summit in Genoa (all in 2001), followed by world-wide demos against the Iraq war in 2003 (Bleiker, 2005).

Resistance and critique against neoliberalism thus became more clearly articulated, visible and transnationalised in the 1990s: "from Seattle, to Chiang Mai, to Prague, to Quebec City and finally Genoa, domestic and internationally-represented protests developed solidarities, stirred public debate and attracted larger crowds committed to challenging neoliberal policies and institutions" (Ayres, 2004: 11). The critique became one of 'neoliberalism', or neoliberal globalisation, following the Zapatistas' struggle in Chiapas, Mexico, and the resistance against the North American Free Trade Agreement in 1994 (Springer and Birch, 2016: 2). Protests targeted neoliberal development programmes, negotiations and trade agreements, and their social and ecological consequences. They challenged state actions, legitimacy and rationalities, in what Sian Sullivan has called multiple and complex "frontlines"; "public or private space[s] where the legitimacy of [state] interests and categories [are] questioned" (2003: 68). These frontlines, she argues, "are everywhere. Within both west and east, they are present wherever and whenever people live – maintain lifeworlds – that are different to and resist the dysfunctional fetishising of rationality and instrumentalism comprising a state-centric and imperialist modernity" (2003: 70).

With the transnationalisation and intensification of resistance came an increase in state violence associated with the disciplining and policing of this growing movement. From the beginning, resistance movements understood the important role of the state in neoliberal globalisation, whether in negotiating trade agreements, empowering global financial institutions or implementing and supporting structural adjustment programmes. They challenged state support of corporate projects – extractive or otherwise – and were confronted with state violence in response. Simon Springer (2016) goes as far as analysing neoliberalism as a *form of violence*. By erasing the interconnectedness between places and spaces that are full of violence, he argues, neoliberalism facilitates narratives of irrationality and 'other', while positioning itself as nonviolent and as "the lone bearer of reason", in contrast to 'irrational' and 'violent' peoples who need to be civilised and who are blamed for the miseries imposed on them (Springer, 2016: 9). Neoliberalism has long been critiqued for the violence it engenders by its students (Bumiller, 2009; Coşar and Yücesan-Özdemir, 2012; Hristov, 2014; Nixon, 2011; Springer, 2015). Anti-neoliberal (globalisation) resistance movements, Sian Sullivan suggests, are a reaction to this structural violence (2005). She draws on Pierre Bordieu's "law of the conservation of violence" (1998) to explain the relationship between structural and political violence and violent responses: "You cannot cheat with the *law of the conservation of violence*: all violence is paid for... The structural violence exerted by the financial markets, in the form of layoffs, loss of security, etc., is matched sooner or later in the form of suicides, crime and delinquency, drug addiction, alcoholism, a whole host of minor and major everyday acts of violence" (Bourdieu, 1998: 40). Violence in the (anti-)globalisation struggle thus emerges from the experience of rage in response to the structural violence in neoliberalism (Sullivan, 2005). Branwen Gruffydd Jones makes a similar argument for understanding resistance against the backdrop of a social order of structural violence, manifest in globalisation and structural adjustment programmes in Mozambique (2005: 57). Neoliberal globalisation and the pursuit of profit, she argues, involve the reordering of "the conditions of real, concrete individuals, communities and societies, whose logics are quite different from those of capital" – a structurally violent process (2005: 57). The new social order of insecurity and structural violence in turn generates further forms of insecurity, violence, inequality, social exclusion and dispossession, masked by the promises and language of economic growth (ibid). The resulting resistance is 'managed' by means of co-option (Bumiller, 2009) and increasingly violent disciplining (Sullivan, 2005) of dissent – as illustrated in chapter 6.

Having outlined my understanding of neoliberalism as theory and practice (and their differences), in the next section I will examine some of these points in more depth, relating

them back to the critical body of literature on offsetting and financialisation of nature. This understanding of neoliberalism helps me avoid essentialising and naturalising 'the market', overcome a problematic state-market divide, and avoid the conflation of neoliberal theory and practice. The FoN literature could benefit from a more critical problematisation of these points, I will argue.

2.3. Back to Financialisation of Nature: Starting points, building blocks and departures

Much of the FoN literature work outlined in section 2.1 has been conducted in a broadly Marxian tradition, often drawing on Karl Polanyi (1944), as well as a number of eco-Marxists inspired by their work (Foster et al., 2010; Clark and York, 2005; Smith, 2007; O'Connor, 1994). An early and influential contribution has been Noel Castree's work on 'neoliberalising nature' (2002; 2008a; 2008b), where he examines emergent literature around these issues and asks:

> *what are the main reasons why all manner of qualitatively different nonhuman phenomena in different parts of the world are being `neoliberalised'?; what are the principal ways in which nature is neoliberalised in practice?; what are the effects of nature's neoliberalisation?; and how should these effects be evaluated? (2008a: 131).*

This initial wave of research very much focused on hegemony of neoliberalism; neoliberalism was found everywhere (cf. Peck and Tickell, 2002). Despite increasingly differentiated analyses and recognition of the importance of new practices, metrics and "technologies of measurement and abstraction" (Robertson, 2012: 388), this 'finding' of neoliberalism tended to be conflated with structuralist accounts based on the observation of the expansion of capitalism into previously uncapitalised spheres of (social) relations, including nature. Noel Castree identifies certain 'rationalities' that are prevalent in much of the literature in his 'ideal-typical characterisation' of neoliberalism as 'abstraction': privatisation (assignment of property rights), marketisation (assignment of prices), deregulation (roll-back of state 'interference'), reregulation (polices to enable privatisation and marketisation), 'market proxies' (market-like management in the public sector) and 'flanking mechanisms' in civil society (to outsource former public services) (2008a: 142). In his early review of the neoliberalisation of nature literature, he argues that neoliberalisation is explained by (fractions of) capital pushing either 1) to overcome the economy-environment contradictions by "bringing [the environment] more fully within the universe of capital accumulation"; 2) for submission of the non-human world to become "a means to the end of capital accumulation – period"; 3) as a "'degrading nature to profit' strategy"; or, lastly, 4) as a means of the state to overcome the inherent contradictions of capitalism (Castree, 2008a: 146-8). Matthew Himley's review of the neoliberal nature

literature confirms this tendency to focus on the advancement of capitalist economic relations on nature (2008).

Since then, scholars have not left the idea of total 'neoliberal hegemony' unquestioned (e.g. Robertson, 2004); they have gone much beyond simple acceptance and critique of 'market-based instruments' as mere 'rollout of capitalism' and provided differentiated analyses of the making of new social worlds (e.g. Robertson, 2012; Sullivan, 2006, 2012; Carver, 2015; Lockhart, 2015). Many have recognised the differentiation of diverse processes of *neoliberalisation* – rather than one uniform and coherent *neoliberalism* – as uneven and frequently contradictory processes (Bakker, 2004, 2010; Büscher and Dressler, 2012; Dressler and Roth, 2011), and the differences to "textbook neoliberal ideology" (Castree, 2008a: 137; Brenner and Theodore, 2002). Yet, much of the financialisation of nature literature continues, implicitly, to accept so-called neoliberal market instruments as mere ''actually existing [environmental] neoliberalism[s]'' (Brenner and Theodore, 2002) and, more importantly, as "project[s] of mobilizing ecological forces in the service of neoliberal hegemony … creating and stabilizing new areas for capitalist activity, even as it is subject to the tendential crises of capitalism which guarantee that this work is never concluded" (Castree, 2008a, referencing Polanyi, 1944 and O'Connor, 1994) – often activelt supported by state forces. Commodification, marketisation and financialisation are thus analysed as consequences of an inherent (neoliberal) capitalist market logic (e.g. Smith, 2007; Castree, 2008a). More or less explicitly, much of the literature accepts these kind of views, taking a 'rollout' and 'rollback' for granted (e.g. Robertson, 2006), and exploring the "real subsumption of nature" (Smith, 2007: 33). According to Evangelia Apostolopoulou and William Adams, neoliberalisation of nature occurs because capitalism has a "strategic interest in promoting a neoliberal version of conservation, via its further inclusion into market function ... and to grab and exploit hitherto protected natures without any 'green' or 'eco-friendly' argumentation" (2015b: 16). They position the reliance of offsetting logics as "the systematic application of market logic and market-based mechanisms to environmental management and governance" (Apostolopoulou and Adams, 2017, *in press*), echoing Catherine Corson and colleagues' analysis of the "incorporation of market logics into environment and conservation policy" (2013: 1). Once again referring back to Castree's work, Evangelia Apostolopoulou and William Adams associate biodiversity offsetting with the "deregulation and the market friendly reregulation of environmental and planning legislation, both key processes in the neoliberalization of non-human nature" (2017). Through a performativity framework, Sian Sullivan analyses the fabrication of natural capital as "attempts to enrol previously uncosted 'standing natures' in the forward-driving movement of capital" (2017, *in press*).

Neoliberal nature, Bruce Braun argues, is conceptualised in the neoliberalisation of nature literature "as an 'environmental fix' for a crisis of accumulation" (2014: 6).

Yet, as Leo Panitch and Martijn Konings argue, such Polanyian analyses, based on a view of the "shifting boundaries between state and market, which would see markets as having become 'disembedded' from the state", rely on a tendency to analyse things through "hegemonic self-representation through the key tenets of neoliberal ideology" (2009: 67-68). This view is representative of much of the critical literature on neoliberalism (cf. Lane and Newell, 2016). In their critique of Jamie Peck's analysis of neoliberalisation (which can be extended to much of the critical literature on neoliberalism), Richard Lane and Peter Newell argue:

> *In simply taking neoliberal ideology at face value here, a problematic definition of neoliberalism is replaced with an equally problematic definition of the process of neoliberalisation. This overlooks the 'hidden hands' and the 'connective tissues' involved, replacing these with an overly structural 'forward-leaning dynamic'. There is a focus here on process, but without a clear identification of practices (2016: 252).*

In other words: There is a danger of a circular argument emerging when the outcome of neoliberalisation is explained as neoliberalisation. Even when authors recognise differences between theory and practice (Castree, 2010; McCarthy, 2006), point to the importance of details (Bakker, 2005) and acknowledge that "generic neoliberalism" does not exist (Castree, 2008a: 137), they tend to explain practices as outcomes of the "forces" of neoliberal capitalism (e.g. MacDonald, 2010a: 515). The danger here is to fall into the trap of a circular logic; explaining the *outcome* of environmental governance – neoliberal nature(s) – with the very existence of the processes that have led to their *emergence*. It is tempting to recognise the nature of environmental governance as social, political and historically contingent, but – rather than taking the implications seriously – then to rely on capitalist (market) logics for (causal) explanations of these processes. In his excellent investigation of 'corporate conservation', for example, Kenneth MacDonald concludes that "what is key here is that this restructuring is an organized practice, by which I mean simply that it occurs through organizations that are increasingly shaped by the eco-modernist imperatives of capitalist development" (2010a: 542). Capitalist or corporate-driven conservation is then identified to lead to "accumulation by conservation" (Büscher and Fletcher, 2015) and other forms of "accumulation by dispossession" (Harvey, 2004; Smith, 2007) on the cost of communities and their livelihoods.

Crucially, this argument is not to deny the importance of such old and new forms of accumulation, and the existence (and increase in) a "spectacular investment frontier in conservation" (Sullivan, 2013a: 198) and the lucrative gains involved. Analyses of

commodification, marketisation and financialisation of nature are very useful to understand the structural (including state) forces and drivers behind offsetting and to formulate critiques. The conceptualisation of offsetting as a political strategy to assure neoliberal hegemony and stability of capitalism, which needs to expand constantly to accumulate capital – manifest in moves to impose market relations on previously "uncapitalized environmental phenomena" (Robertson, 2004: 365) – can be problematic, however, for a number of reasons that I explore below. I argue that the focus on marketisation helps reify – and runs the danger of naturalising – the very idea of markets, it ignores the distinct non-market genealogy of biodiversity offsetting, it may reflect a problematic state-market distinction and relationship, and can lead to the conflation of neoliberal theory with neoliberal practice.

Essentialising and naturalising the market?

Marketisation analyses rest on the acceptance of biodiversity offsetting as a market instrument. This may be helpful to understand particular features of biodiversity banking schemes (particularly in the US and in Australia) and to analyse the *discourses* around offsetting, but not to understand (project) offsetting in Europe. When examining biodiversity offsetting in practice, it becomes clear that there is very little 'market' in many of these so-called 'market-based' instruments – the history of offsetting is a history of regulatory mechanisms in the US, Australia and Germany. Marie Hrabanski shows that the re-invention of offsetting as 'market-based instrument' (MBI) is relatively recent (2015). "Compensation mechanisms", she argues, have "undergone a 'renovation' on both the international and national environmental policy scenes", which she describes as "active modification and adaptation of existing mechanisms as market-based instruments to facilitate their implementation in different contexts" (2015: 143). This results from political influence, not "actual scientific progress in ecological or economic sciences" (Calvet, Guillaume, and Claude, 2015: 492). Only in the last ten years, in *response* to these political influences, has offsetting become associated with an economic and market vocabulary in the academic literature, associated with 'ecosystem services', 'costs', 'market', 'incentive', 'trade' and others, and accompanied by changes from 'ecological compensation' and 'mitigation' to 'biodiversity offsetting' (Calvet, Guillaume, and Claude, 2015: 497). This framing appeals to decision makers in an era where association with neoliberal theory trumps any alternative, and framing in neoclassical economic language appeals to corporate leaders, politicians and many green economy supporters. The MBI framing is based on the appeal of markets and association with internalisation of externalities more than offsetting in practice. In fact, once analysed in practice, it become apparent that project-based offsets do not resemble MBIs at all, and even the market-nature of established banking system (as in the US) is

questionable at best (see also Pirard, 2012; Boisvert, Méral and Froger, 2013; Boisvert, 2015; Vaissière and Levrel, 2015). "MBIs as a category look more like an asylum country for all tools with a price component" (Hrabanski, 2015: 144). This is illustrated by Louise Carver (2015) and Louise Carver and Sian Sullivan (2017) who illustrate the politically fabricated supply and demand dynamics, prices, offsetting ratios and multipliers (see also Brock, 2015). The application of key offsetting principles, such as ecological equivalence – prerequisites for any alleged market-construction – is "frequently incomplete or absent", Holly Niner and colleagues show in the context of marine biodiversity offsetting in Australia (2017: 22).

Yet, despite the notable exceptions explored above, the market logic in offsetting is frequently not questioned. Sarah Benabou states that "[t]he market logic behind habitat banking has been particularly pervasive in the development of voluntary biodiversity offsets" (2014: 104). Yet, as many of these works themselves show, the concept of the 'market' is meaningless when abstracted from actually existing local market infrastructure. Critiques of 'marketisation' thus run the danger of reproducing the conceptualisation of 'the market' as separate from, and outside of, the political realm, the 'legitimate' sphere of political decision making and (supposedly) democratic negotiation. While criticising the supposed depoliticisation (and pointing out the political nature of valuation processes, methodologies and processes), much of the literature does not go far enough in overcoming this divide. Critiques framed around 'the market' can reproduce its associations with "a natural system that might bear upon us equally, like gravity or atmospheric pressure" (Monbiot, 2016). This hides the way the idea of 'the market' operates as empty signifiers whose power lies in its mobilising capacity rather than essence. Mobilising in the interest of 'the market' really tends to represent "what corporations and their bosses want" (Monbiot, 2016). Rather than accepting a market imperative, we need to de-naturalise these market-relationships, identify and examine the agencies behind them, and deconstruct their underlying power relations and corporate and state interests (and how they overlap).

Reliance on a universal logic of (neoliberal) capitalism to understand offsetting thus risks essentialising the idea of offsetting itself, ignoring the importance of the social context within which offsets are embedded and within which it is mobilised for particular political economic purposes. Critique of marketisation or neoliberalisation may unintentionally close down more fundamental critique by taking for granted the system in which these processes take place, thus reifying this very system; a statist capitalist system based on social and ecological exploitation. A critique of offsetting as commodification, marketisation and financialisation of nature can thus prevent a more fundamental questioning of the underlying growth imperative, industrial

expansion, a debt-based financial system and the infrastructure and energy projects upholding the political economic system as well as, importantly, the legitimacy of the state – which offsetting helps legitimise, I will argue. It may further obscure more nuanced analyses that help investigate more specific rationales that are invoked as well as the more fundamental role of offsetting in the violence inherent in the infrastructure/extractivist projects that they are meant to legitimise as well as the social role in pacifying and co-opting critique.

Governing *through* markets: overcoming the state-market divide

Critical political economists have long recognised that the role of the state has not diminished under neoliberalism but has been transformed (i.e. Harvey, 2005; Peck and Tickell, 2002). Similarly, the role of states in protecting corporate interests and acting on behalf of, rather than in opposition to, capital, is not new. This protection involves the violent policing of dissent, introduced above and explored in more detail in later chapters. In the FoN literature, offsetting has been analysed as a manifestation of public-private collaborations (Robertson, 2000, 2004; Pawliczek and Sullivan, 2009; Sullivan and Hannis, 2015; Carver and Sullivan, 2017; Brock, 2015). These analyses show very well the (sometimes resisted) historical development of offsetting and the 'institutional expansion', the "process whereby particular relations of power become anchored in people's routine strategies and so are woven into the fabric of social life" (Konings, 2010: 742), involved in offsetting. Yet, these analyses not only continue to implicitly examine offsetting as market instruments, as I argued above, but they also continue to conceptually separate these two spheres. Instead, I argue, the literature would benefit from considering how the state governs *through* these so-called market instruments.

This problematic conceptual separation between markets and states is particularly visible in Karl Polanyi's work, and those inspired by him. At first sight, his conceptualisation of embedding and re-embedding markets and his recognition of the institutional infrastructure within which this takes place constitutes a radical (double) move to overcome the market-state divide (Polanyi, 1944). Instead, political economists have shown, this approach continues to reproduce and essentialise the concept of the market as a separate entity and a pre-existing market logic (Cooper and Konings, 2015; Konings, 2010; Krippner, 2010). Neoliberal conservation practices such as offsetting should not be read as 'market dis- or re-embedding', but as governance tools that have no external logic, but through which the state accomplishes specific (socio/political economic) objectives.

Implicitly, many analyses continue to assume that the contemporary neoliberal world and the subjugation to a quantitative economic logic are based on this inherent market logic,

contributing to the naturalisation, normalisation and depoliticisation of the market idea. This is visible, for instance, in Castree's view on marketisation; "that is, the assignment of prices to phenomena that were previously *shielded from market exchange* or for various reasons unpriced" (2008a: 143, emphasis added). This example illustrates the reproduction of the conceptual separation of the market and state.

This literature thus cannot account for the way (the idea of) 'the market' is used by the state to exercise control, to govern, and to restructure our relationship with nature. A better understanding of this function of so-called market instruments would help overcome a problematic Polanyian heritage, and a tendency to conflate neoliberal theory and practice.

Neoliberal theory, neoliberal practice and the need for distinction

This could further benefit from a more critical questioning of the difference between neoliberal *ideology*, with its belief in the necessity to construct markets, and neoliberal *governance*, whose managerial emphasis is under-recognised (Knafo et al., 2018, see section 2.2). Sam Knafo and colleagues have recently conducted pioneering work in tracing the historic lineage of neoliberal managerialism (2018). Although in practice, they argue, neoliberal managerialism has always been about engineering, creating and exploiting competition and competitiveness, its aim has *not* been to promote market rule, but it has historically been characterised by *distrust* of market rule (2018).

Even among critical political economists, managerialism has been understood as the mobilisation of resource and bureaucratic means that contribute to the enforcement of market mechanisms and shaping of the state to conform to a market logic (Peck, 2010a). Consequently, the state would itself increasingly act in 'market-ways' or 'like a firm' (Davies, 2014). Rather than accepting managerial governance as extension and intensification of neoliberal theory, or simply to 'entrench capitalism' or ensure capital accumulation (Harvey, 2005), Knafo and colleagues identify a distinct social lineage, rooted in the early post-war era and involving important changes in the US American defence sector, the pioneering role of the RAND corporation and managerial innovations through American business schools (2018). The development of managerial governance was based on a new science of decision making grounded in the scientific tools of Systems Analysis, game theory and the calculative technology of cost-benefit analysis (Knafo et al., 2018). The basis for this kind of governance was the empowerment of managers rather than 'market ideas' of efficiency (which were mobilised discursively, as explained above) – the aim was control and institutional expansion (Konings, 2010).

Accepting this starting point facilitates seeing how so-called MBIs – or 'neoliberal technologies' such as offsetting – lead to enhanced state power (cf. Konings, 2010; Brock, 2015) rather than loss of state control, as globalisation critics have long advocated. Even critical FoN scholars still appear to – implicitly, rather than explicitly – accept neoliberal theory and free-market ideology at face value, grounded in neoclassical economic mythology (e.g. Spash, 2015). Where the difference between neoliberal theory and practice is increasingly acknowledged, it tends to rest on the view of policy as *failed application* of theory, 'too simplistic (theoretical) blueprints' (Büscher and Dressler, 2007) or flawed neoliberal theoretical understanding of human nature (Fletcher, 2014; Büscher et al., 2012) – rather than recognition of the distinct managerial lineage of neoliberal policy outlined above. Robert Fletcher, for instance, states that neoliberal (conservation) practices can be 'antithetical' to neoliberal ideology and blames it on the particular 'virtualistic vision' that underlies market mechanisms, "insofar as they seek to transform the world to conform to a model that is assumed to already exist" (2014: 88). This vision, he argues, "contains fundamental errors while offering such impossible criteria for fulfilment that reconciling theory and practice would in fact be quite difficult" (2014: 88)[8]. The state continues to be seen solely as a regulatory power, *rather than integral to these markets*: "an essential neoliberal tenet dictates that primary responsibility for allocating resources should be left to market actors, with the state acting mostly to provide the legal and administrative structures shaping markets rather than intervening directly" (Fletcher, 2014: 92).

Recognising this distinct lineage, and therewith the difference between neoliberal theory and practice, helps me overcome the deductive reasoning and continuous privileging of neoliberal theory as explanatory device. This reliance is not useful methodologically, analytically or politically. While important to recognise the power of neoclassical mythology, this discourse, I argue in chapter three, plays an important legitimising rather than driving role; with 'the market' as powerful rhetorical device rather than inherent logic. This is not to deny the importance of novel technologies in the (discursive) remaking of nature into "nature that capital can see" (Robertson, 2006), but to refrain from assigning performativity to the discursive reconstitution of nature as ecosystem services or natural capital and pointing instead to the instrumental use of such framings for political purposes. Instead, an analysis through the lens of neoliberal managerialism can point to the important role of offsets as social technologies to manage dissent.

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[8] Similar arguments have been made by Bram Büscher and Wolfram Dressler (2007) and others.

Keeping in mind the development of managerial governance as science of decision making, this approach further helps focus on the *agents of governance* (Knafo et al*.*, 2018) rather than privileging overly structuralist explanations around commodification and financialisation of nature. Managerial governance helps point towards bureaucratic forms of control, including monitoring and surveillance that have become important parts of the biodiversity knowledge infrastructure as well as reliance on scientific expertise (including particular kinds of quantitative data and corresponding processes of classification, categorisation and commensuration). But it goes beyond these dimensions, involving a radical transformation of the 'science of administration', based on statistical tools and quantification, benchmarking and standardisation for decision making to deal with uncertainty and the use of cost-benefit analysis (Knafo et al., 2018). Richard Lane traces the foundational role of 'the environment' in cost-benefit analysis (2015). Whereas Knafo and colleagues explore the role of performance assessments, league tables, shareholder value metrics for enhancing the power of new managers to deal with uncertainty, similar dynamics can be observed in the processes of making Europe's nature offsettable (chapter three) through complex methodologies, and the collection and analysis of 'environmental intelligence' – ecosystem metrics and data – for classification, commensuration, surveillance and monitoring. Managerialism is based on surveillance and policing (Springer, 2012; Peck, 2010b). The real object of managerialism, surveillance and policing, however, is social: making people legible and governable (Scott, 1998). It is triggered by the need to manage (possible) dissent, and the risks it poses to corporations and states.

Moving away from nature as 'object of governance'?

Despite recognition of the role of offsetting in legitimising unsustainable business operations (e.g. Seagle, 2012; Sullivan, 2012; Carver, 2015), there seems to be a tendency to take at face value the claim that biodiversity offsetting is being implemented as a tool to manage *biodiversity loss*, thus taking for granted the idea of nature as the main 'object of governance'. The analytical starting point (with few exceptions, such as Benabou, 2014; Curran, Hellweg and Beck, 2014; Sullivan and Hannis, 2015) thus tends to be the alarming rate of biodiversity loss and the ability of capitalism to turn this crisis into an accumulation opportunity. This is visible, for instance, in the way even critical scholars tend to anchor their critiques in the omnipresent conventional definition of offsetting first put forward by offsetting champion Kerry ten Kate and colleagues as "conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity" (2004: 13). While scholars then go on to critique offsetting *in practice*, the theoretical starting points are not questioned enough. Even critical analyses that do not accept many of the

underlying assumptions of offsetting tend to reify and therewith legitimise the very ideas that it entails – such as the *intended* driving force (conservation needs); the *intentionality* behind offsetting; the 'unavoidable' nature of the harm to biodiversity; subordinated to the 'need' for 'development' projects; and the very concept of no net loss. Adopting, rather than questioning, this definition not only turns them into the most widely cited offsetting publications, but lends IUCN/Insight Investment and BBOP legitimacy and authority. This raises questions around their institutionalisation in private governance arrangements and the reinforcement of offsetting ideology which will be further explored in chapter three.

Critics often point out that offsetting policies ignore the 'real' reasons for biodiversity loss, and reproduce the same political-economic patterns and power relations that are responsible for biodiversity loss in the first place. This starting point is nevertheless accepting biodiversity loss as a material risk (usually to corporate profits), rather than the need for social control and stability to secure accumulation, caused by the lack of licence to operate (reputational and regulatory – *social* – risks). Clive Spash (2015) and Sian Sullivan (2012), on the other hand, both show how offsetting serves to *legitimise* and *facilitate*, rather than *prevent* destruction and degradation: "The model is development-led: it *requires* ecological degradation in order for conservation units or credits to attain market value" (Sullivan, 2012: 24, emphasis added).

To understand the development of (project) offsetting in Europe, I suggest that it is more productive to approach offsetting through the *crisis of legitimacy* that has become a problem for (extractive) industries and governments, the desperation of conservation organisations, the increasingly visible inherent tensions and contradictions of the green economy, based on social and ecological exploitation, degradation and violence. This goes beyond Olivier Thébaud and others' view of offsetting as tool "to manag[e] the ecological costs of economic development" (2015: 114) to be seen as *social technology of governance*. Offsetting thus constitutes, I hope to show, not just a way to profit from the 'expansion of markets' into environmental governance, but a response to this legitimacy crisis of corporations, but also of states and international institutions such as the EU, who are constantly involved in state-building to legitimise their very existence.

Just how novel is biodiversity offsetting?

Lastly, the critical offsetting literature tends to focus very much on recent offsetting initiatives (apart from a number of analyses of the US American and Australian schemes (e.g. Robertson, 2004; 2006; Salzman and Ruhl, 2002; Maron et al., 2012, 2015; Wotherspoon and Burgin, 2009), and the supposed novelty of such schemes, particularly where framed as market-

instruments, in natural capital language. This can be useful to highlight the new dimensions of offsetting initiatives, the advanced simplification and abstraction of biodiversity, the novel technologies, techniques and metrics, as well as their roles in the green economy which now "recognizes, includes and, consequently, further intensifies the exploitation of 'nature', enmeshing further natural resources into the machinations of economic and financial structures" (Dunlap and Brock, *forthcoming*; Fairhead, Leach and Scoones, 2012; Dunlap and Fairhead, 2014). Yet, this focus risks neglecting the long history of offsetting (and the human-nature relations it is grounded in) and the way it is used for particular political purposes, rather than constituting a simple 'rollout' of neoliberalism and expansion of markets. Compensation has long formed part of legislative requirements, Marie Hrabanski shows, but "these regulatory devices were non-binding and seldom applied" (2015: 144; see also Moreno-Mateos et al., 2015). Only since the renewed interest in offsetting over the last two decades have they become known and criticised as MBIs. Yet, she continues, "MBIs constitute an extremely heterogeneous group that makes little sense from an economic theory perspective. These instruments do not share many characteristics and show a very loose relation to markets as defined by standard economic theory" (Hrabanski, 2015: 143-144; Pirard, 2012; Boisvert, Méral and Froger, 2013). This renewed interest in offsetting is exactly due to its ability to capture imaginations and appeal to the 'virtues of efficiency and effectiveness that standard economic analysis tributes to the market'; virtues projected onto biodiversity offsetting (Boisvert, Méral and Froger, 2013: 1132). But its relative recent popularity needs to be investigated through its use to legitimise industries in the time of crisis, and to 'green' developments in- and outside Europe; connecting 'beyond-Europe extractive industries' with in-Europe large infrastructural developments (Sullivan, 2013b). Its roots lie in the fundamental dynamics and violence inherent in extractivism, industrialism, green economic 'progress' and (ecological) modernisation. Taking these seriously yields a 'deeper' and richer history of offsetting. They will be further explored in the following section on human-nature relationships and violence.

2.4.   Humans, nature, non-human nature?

"[S]ocieties that dominate nature also dominate people", Murray Bookchin argues (in the words of Sale, 2000: 122), quoted in length in the introduction. Going beyond a focus on marketisation enables us to look at offsetting as manifestation of more fundamental dynamics of control and violence based on the separation between human and nonhuman natures – going to the root causes of many of the ecological and social crises that originated with industrialism, the spread of industrial agriculture, plantations, and colonial conservation. *Industrialism* here refers to "the

existence of complex mechanized systems of production that are built upon centralized power and the exploitation of people and nature" (Green Anarchy #13, 2003: 1). Industrialism is inseparable from state power. Any critique of industrialism

> *is a natural extension of the critique of the state, because industrialism is inherently imperialistic, genocidal, ecocidal, and patriarchal. In order to maintain an industrial society, you must set out to conquer and colonize lands in order to acquire non-renewable resources to fuel and grease the machine (Green Anarchy #13, 2003: 1).*

The industrial society relies on human and nonhuman displacement, cheap wage labour, coercion, centralisation and specialisation, undermining local autonomy, self-sufficiency and non-instrumental (and non-economistic) relationships and values. The mechanistic worldviews that came to replace the latter have been fundamental to the development of (colonial) conservation policy for the sake of resource policy and social control over colonised peoples, and form the basis for consequent processes of domestication, objectification and exploitation that give rise to the instrumental view of nature that makes commensuration and fungibility of nature possible. *Domestication* denotes both "the process by which human beings tame, control, breed and genetically modify other forms of life" as well as the (forced) shifting of nomadic populations to settlement for governability and social control, closely related to the idea of *ownership* (Green Anarchy #13, 2003: 1). It resembles what Daniel Quinn, in his novel Ishmael (1992), describes as the transition from 'leavers' (those who accepted what earth provided) to 'takers' (those who demand what they want from the earth) and it is here that he locates the roots of unsustainability. With it comes *alienation*, the human separation from direct experience and disconnection from the human and nonhuman natural world around us, leading to disempowerment. Alienation is visible in the very naming and framing of nature, the categorisation and classification as 'species' and 'biological diversity' (see chapter three) that gives rise to the view of nature as external and 'aggregate', and the creation of commensurability based on such aggregates.

It is here, Murray Bookchin (as well as many other before and after him) argues, where we need to locate the hierarchies that not only corrode social but also ecological life (1982). The violence inherent in these hierarchies is manifest in the objectification, (binary) categorisation, domestication and domination of human and nonhuman nature, the alienation that has come with separation and specialisation/division of labour and loss of connection to land. Taking this seriously shows how offsetting represents and reproduces this separation of humans and nonhuman nature, further entrenching the hierarchies: "by placing fungibility at the core of biodiversity policy", Hannis and Sullivan argue, "it further downgrades such relationships ... A

key message of offsetting, in fact, is that human habitat is best separated from nonhuman habitat, and that nature is best preserved by separating it from our daily life and safely enclosing it elsewhere" (2012: 15). This separation of human and nonhuman nature is closely related to multiple human systems of oppression and hierarchy based on binary understandings of gender, sexuality, race and class, the construction of human and non-human 'others', and their representations as 'deviant' and 'unnatural'. Such hierarchies continue to be visible in the underlying racist assumptions about local (indigenous) people's unsustainable practices that form the foundation for 'avoided degradation' underlying offsetting projects and the supremacy assigned to Western science at the cost of exclusion of alternative value and knowledge systems (cf. Kill and Franchi, 2016). Domestication of nonhuman nature and humans has always gone hand-in-hand; through colonialism, genocide and ecocide – "When the land is needed but labour is not, the most likely outcome is the expulsion of people from the land" (Li in Hall et al., 2015: 470). Such expulsion for offsetting purposes has been documented in Madagascar by Jutta Kill and Giulia Franchi (2016).

As nature is externalised and 'othered' (Chapter three), socially constructed economic systems become naturalised through the (ab)use of biological concepts, such as *growth* and *recession*, *yield*, or *evolution*. The very naturalisation of the market explored above plays into this dynamic. A problematisation of the illusion of the "infinite substitutability" of this external nature (Sullivan, 2010: 116) which underlies offsetting, and the belief in human ability to restore and recreate nature (analysed in chapter six) is closely associated with the high-modernist fascination with *technology* – what Herbert Marcuse would call "technology as ideology":

> *Technology, as a mode of production, as the totality of instruments, devices and contrivances which characterize the machine age is thus at the same time a mode of organization and perpetuating (or changing) social relationships, a manifestation of prevalent thought and behavior patterns, an instrument for control and domination. Technics by itself can promote authoritarianism as well as liberty, scarcity as well as abundance, the extension as well as the abolition of toil (1978: 138-9).*

Taking such critiques seriously leads to an analysis of offsetting in relation to processes of legibility, governability and control over nature. They help understand the underlying dynamics, power relations and assumptions about human-nonhuman nature relationships of offsetting; and show how offsetting increases the alienation from nature, deepening the "cultural poverty" of viewing nature as a mere provider of *marketable* services to humans (Sullivan, 2009). They further point to the important role of the state in offsetting, and the violence inherent in it.

2.5.   Situating violence

This violence, in its different manifestations, deserves some elaboration in the last section of this chapter. It becomes visible, firstly, in the reductionist and instrumental reframing of nature that is inherent in making nature offsettable, and the quantification, objectification and commensuration that offsetting involves. Camila Moreno and colleagues have coined the concept of "ecological epistemicide" (2015), the violent processes of classification and quantification; and therewith numerical domination and exploitation that is exercised through its reduction to quantitative values. It makes nature conform to performance standards, indicators and lending requirements, therewith legible and governable. "In order to control an uncontrollable", Peter Gelderloos has argued, "it must first be named. All domination flows from an original categorical enclosure" (2017: 45). Taking this epistemological violence seriously involves a rejection of anthropocentrism and the notion of a "universal epistemology" (Franks, 2014: 703) and a recognition of diverse ontologies (Sullivan, 2017a). Such a commitment accepts that "[n]o single branch of knowledge can demarcate universal principles for the liberation and operation of all other social practices" and "[d]ifferent practices have different categories of experience, truth conditions, discourses and rules, and whilst they frequently intersect, no single practice and its underlying norms takes priority" (Franks, 2014: 703, as previously articulated by Bakunin, 1970, among others).

Accepting that the state and capital are not distinct but form "integral parts of the totality of capitalism" (Springer, 2010: 535), secondly, redirects attention to state violence and the disciplinary power of the state. This helps overcome an overemphasis on neoliberalism: "while the rationalities, strategies, technologies, and techniques of neoliberal governance are new, the disciplinary logic of the state remains unchanged" (Springer, 2012). Instead, it facilitates a more systemic focus on the violence inherent in extractivism, industrial development and infrastructure. The "natural resource base upon which industrial societies stand is constructed in large part through the use and threatened use of armed violence [and it] quickly becomes apparent that armed violence and the environmental degradation associated with it are intimately woven into the everyday lives of core nation citizens through the purchases they make and the fuels they consume" (Downey, Bonds and Clark, 2010: 437-8). This armed violence is visible in the increasing militarisation and surveillance of nature to protect against "uncivilised natives", i.e. in physical violence against local poachers – what Rosaleen Duffy has coined "war by conservation" (2016, see also Büscher and Fletcher, 2018, in press). It is also manifest in the violent policing and suppressing of resistance and disciplining of dissent

explored in chapter six. Lastly, emphasis on state and corporate violence facilitates exploring the slow violence inherent in extractivism and resulting climate change and biodiversity loss introduced in the Introduction.

2.6. Conclusion

Moving away from the marketisation focus, following Bruce Braun, allows me to

> *tell the story of neoliberalism and neoliberal natures less in terms of the inherent creativity of capital – a temptation into which radical critique too often falls — and more in terms of the absorption of energies and conditions that neoliberal capitalism presupposes but does not itself produce (2014: 2).*

Offsetting is then the outcome, rather than source, of these transformations; and can be conceptualised as the "absorption of critique" (Nelson, 2014: 1) – to pacify and co-opt critics, improve governability and social control, and enhance power. This is not to underplay the importance of banking schemes. Instead, it is to shed light on a rather under-researched way offsets are used that is not a market-way at all. This conceptualisation allows for a focus on the "consolidation of aggregate thinking", the reliance on assumptions and calculations of "ontological equivalence" (Sullivan, 2017a: 229) or "species equality" (Regnery, Couvet and Kerbiriou, 2013), and, most importantly, the diversity of practices that claim to achieve NNL, their political effects and their productive power. It also allows for focus on the underlying premises of repair and restoration that many offsetting projects are based on, the "accumulation by restoration" (Huff and Brock, 2017) which reflects a shift towards an "economy of repair" (Fairhead, Leach and Scoones, 2012), facilitating a double process of profit-making. This is also not to deny the importance of the intensification of certain financial processes, assignment of property rights, private ownership, the ideological foundations of offsetting, anchored in discourses around the commodification and marketisation of nature, and the role in generating financial funds, at times accompanied by loss of access to land and livelihood, displacement and further marginalisation. Instead, I hope to show, students of offsetting can learn from recent scholarship on neoliberal managerialism, to understand changes and discontinuities in current modes of conservation and green economy practices more generally, historicising and analysing current offsetting developments. To do so, in the next chapter I explore the normalisation and institutionalisation of offsetting in the EU policy landscape.

3. Making Europe's nature offsettable: the spectacular performance of sustainability through discourse and (community of) practice

Anchoring offsetting in the European conservation landscape, or *Making Europe's nature offsettable*, has required, and continues to require, a lot of hard work. As argued in the *Introduction*, understanding this offset-making involves analysing the agency and the productive power exercised by offset-makers. Rather than falling back on explainations of the increasing popularity and legitimacy of offsetting as a natural expansion of capitalist market-making – or the mere institutionalisation of offsetting narratives – this chapter analyses the concurrence of the *ideology*, the *practice*, and the *industry* behind offset-making. For offsetting to become a legitimate policy option and corporate practice in Europe, this *offsetting industry* – a professionalised but diverse 'community of practice' of *offsetting entrepreneurs* – has been crucial. Their work builds upon, and draws on the natural capital and ecosystem services discourses, which are mobilised and reproduced through international (offsetting) events and conferences, including the 2013 and 2015 Natural Capital forums in Edinburgh and the 2014 BBOP No Net Loss (NNL) conference, analysed below.

Before analysing the EU's attempt to further institutionalise biodiversity offsetting through the NNL initiative in chapter four, in this chapter I introduce the individuals and organisations, the discourses and ideologies, the spaces and places, and some of the technologies and concepts involved in *making Europe's nature offsettable*. These processes have been fundamental to the establishment of offsetting as a *social technology of governance* and represent the spectacular performances of sustainability – the highly-productive theatrics of legitimising destruction – that underlie offsetting. Following this introduction, I first trace the discursive and ideological transformation of nature that allows for making it *offsettable* by examining how nature has 'become' a global resource, ecosystem service provider and natural capital, and produced as corporate risk, accumulation opportunity and managerial object, requiring profitable securitisation. This helps me explore how offsetting has come to be seen as a mechanism to handle these risks and exploit these opportunities, situated as a solution to biodiversity loss and institutionalised into corporate-NGO partnerships, pilot projects and case studies. I examine these discourses and narratives within which offsetting is embedded not to assign performativity or agency, but to understand how they are selectively mobilised and drawn upon for offset-making and to accommodate particular industrial interests that will be explored in more detail in following chapters. They serve as 'ideological backup' for the processes of offset-making explored below. Secondly, I analyse the development of the *offsetting industry* which has been fundamental in the spreading of offsetting ideology and practice. In this section, I

explore the different roles of these professionals, focusing on key actors and individuals involved. In the third section, I then examine this community 'in action', as I turn to the spaces and places of offset-making, where the aforementioned discourses are drawn upon to legitimise corporate and state practices. After introducing the three events I participated in, I analyse them through the lens of Guy Debord's *spectacle* (1967) and Victor Turner's *ritual* (1969), as instruments to create unity and 'perform sustainability'. Within these spaces, I analyse the means and mechanisms, the techniques and technologies, and the visualisations and vocabularies by which offsetting is constituted and given the authority and legitimacy to become a policy instrument and corporate technology.

3.1.   'Selling nature to save it' – tracing discourses, ideologies and knowledge systems

We need a language that business understands … We are all astronauts … We are in this together, we need to fix this together (Peter Bakker, WBCSD, at the 2014 BBOP conference)

Biodiversity conservation, Kenneth MacDonald argues, is "defined through the institutionalised association of individuals, organisations, bodies of knowledge and interests" (2010b: 256). Biodiversity offsetting relies on powerful ideological narratives and knowledge systems based on (eco)systems (service) and natural capital thinking and positioned in the new green paradigm of 'valuing nature'; highlighting its monetary value to encourage protection and conservation. Based on "neoclassical mythology" (McAfee, 1999: 134), offsetting is legitimised by the need to internalise environmental externalities, notions of scarcity of natural resources, and 'nature under threat'. So-called market forces are meant to distribute scarce conservation resources most effectively and preserve ecosystem services at the lowest possible cost (Ferraro and Simpson, 2002), leading to 'win-win' situations for buyers and providers – to show business leaders that "protecting nature can be a profitable corporate priority and smart global business strategy" (Andrew Liveris, CEO of Dow Chemical Company, in Walsh, 2011). The natural capital discourse is being mobilised to represent a new understanding and management of nature, abstracted from its local, and importantly social context, and subjected to processes of marketisation and financialisation. This discursive re-packaging of nature is grounded in a long history of framing and reconceptualising nature based on changing paradigms and a series of novel inventions, measurements and valuation techniques – from cost-benefit analysis (Lane, 2015) to contingent valuation or Willingness to Pay – to 'objectively' quantify and abstract biodiversity impacts and opportunities. These all help to make nature 'commensurable' (Sullivan, 2009; Robertson, 2012) and facilitate the discursive alignment of corporate interests

and ecological sustainability which initially emerged as a challenge to growth-oriented capitalist 'Business as Usual'.

The discourses and languages that invoke economic rationality and 'the market' to position offsetting, I argue in the literature review, constitute powerful mobilisers to draw in new actors and build novel alliances. In reality, however, there is very little 'market' in offsetting. Nevertheless, examining these discourses is important to understand their appeal and to explore the way they are used to draw in the conservation community (and by conservation organisations to pacify internal debate and get members on boards, cf. MacDonald, 2010b). This section aims not to explain the origins of offsetting itself, which has been popular in different parts of the world and industrial sectors for a long time. Instead, it aims to explain its (renewed) popularity in the European political-economic landscape by tracing the genealogy of the narratives that are frequently drawn upon for discursive justification.

Nature as resource

The separation of human and nonhuman nature alluded to in the introduction, the 'othering' of nature and the emerging view of nature as a resource that intensified during the Enlightenment period – fundamental to processes of domination and domestification of nature – lie at the very heart of offsetting. They facilitated, Arturo Escobar argues, a specific kind of resource management (1995) based on discourses around scarcity that ignore the abundance of resources for some, and the lack for others – in other words the inequalities and politics of resource *access*. The framing of 'resources' assigns importance to nature in that it is "considered useful for some higher purpose"; not for what nature *is* but what it *can become* (Escobar, 1995: 23). Conceptualising something (or someone) as a resource means placing them under the authority of production; like raw material that requires processing and allows exploitation. This conceptualisation of nature as resource started with the initial wave of commodification of land, marking the beginnings of capitalist development in Britain (Wood, 1994) and was then exported through colonialism and imperialism to facilitate efficient 'planning' to maximise resource exploitation and control over 'unruly populations'. This first wave of enclosures was a violent process with long-lasting social and cultural consequences, imposing a particular view not only on nature, but also on people. Wolfgang Sachs has argued that

> *interpreting the state of the world chiefly in terms of 'resources', 'management' and 'efficiency' may appeal to planners and economists. But it continues to promote development as a cultural mission and to shape the world in the image of the West … [imposing on] people how to see nature, society and their own actions (1999: 55).*

Nature as global (eco)system

While the utilitarian view of nature as resource forms the foundation for European 'resource management', offsetting is further predicated on the conceptual 'globalisation of nature'. This involves the view of nature as a 'global system' where – paradoxically – interconnections are discursively recognised, but subsequently denied in the acceptance of – and belief in – universality, substitutability, and commensurability of nature. This denial is essential for the kind of management – or managerialism – that offsetting is grounded in. Offsetting specifically involves the creation of equivalence between spatially and temporally separate natures (although the plurality of the word is not recognised). Only the view of the planet – but also of this rather recent and curious social construct of 'biological diversity' that excludes humans – as 'global' creates the necessary linkages and interdependencies that allow for offsetting. Only this view of one planetary ecosystem with planetary boundaries (Rockström et al., 2009), which encompasses the diversity of local ecosystems, opens up the possibilities for NNL policies.

The very idea of a 'global system', and the consequent construction of biodiversity loss as 'global problem', is startlingly recent, "deriving its main impetus from the ecological fervor fostered by the Club of Rome reports from the 1970s, which provided a distinct vision of the world as a global system where all parts are interrelated" (Escobar, 1995: 193). This shift is sometimes traced back to the 1969 beaming of NASA photos of planet earth from the moon, which marked not only the representation as 'global' but also, and at least as importantly, as "something to which we belong but which remains distinct from us" (Fournier, 2013: 64). The discursive work involved in the construction of that 'one planet' is visible in the milestone report "Our Common Future" by the World Commission on Environment and Development, under Norwegian chair(wo)manship, where it was claimed that

> *Humanity's inability to fit its doings into that pattern [of clouds, oceans, greenery, and soils] is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognized—and managed (1987: 1).*

It would be 'Western rationality' that needed to be positioned to solve these immense challenges: sustainable development – and later the green economy – became the new magic bullets to eradicate poverty and protect the environment (Escobar, 1995). The constitution as global is based on the proliferation of, and preoccupation with, aggregate numbers and statistics that hide inequalities and power relations, winners and losers, and risk homogenising and depoliticising ecological and social destruction. In his seminal work "A vast machine: Computer models, climate data, and the politics of global warming", Paul Edwards traces the

construction of the global earth system that allowed for the establishment of the *political reality* of global warming and climate change, the history of climate modelling, large-scale data collection and analysis and the creation of the climate knowledge infrastructure (2010). He examines the scientific and political work that then became institutionalised in global institutions and ways of thinking – what he calls "infrastructural globalism" (Edwards, 2010). Similarly, the development of 'global nature' and 'global biodiversity' as distinct objects of knowledge and governance has been facilitated by the construction of 'global earth'. A closer analysis of the role of scientific projects and programmes, measurements and classification systems, as well as frames and mobilising devices – such as the IUCN red lists of threatened species – and events – e.g. the UN International Year of Biodiversity or the International Decade of Biodiversity – reveals the work that has gone into this construction.

The same systems-thinking, based on belief in an 'adaptive whole' and mechanical laws of nature, lies at the heart of mechanical philosophy that gained prominence in early modern Europe in the 17th century, describing the earth as a large-scale mechanism – modelled after machines, rather than organisms. Some of the assumptions and ideas of mechanical philosophy can still be seen in the paradigm of cybernetics. Cybernetic systems, according to cybernetics pioneer Norbert Wiener, are self-regulating systems with positive and negative feedback loops (Wiener, 1948). They are a special class of cause-and-effect (input-output) systems in which input is determined, at least in part, by output (Patten and Odum, 1981: 886) and serve to analyse relations between mechanisms and their environments.

Some ecologists have argued that ecosystems constitute cybernetic systems that balance energy input and output, stabilised through feedback loops (Patten and Odum, 1981). Bernard Patten and Eugene Odum, well-known ecosystem theorists and 'environmentalists', have famously argued:

> *For us, we must ask how it is that environment is always prepared and ready; why did it not become chaotic long ago, a disorganized heap of unprocessed and partially processes energy-matter residues from the evolutionary biology of past ages? The theory of ecology is not pat for us. We believe that to understand the organism in nature, its other half, environment, will have to be understood as well. To us, "environment" means environment unspecified, but "ecosystem" is environment specified. The ecosystem is the level of organization concerned with the orderly, not chaotic, processing of energy-matter in the biosphere. We do not believe that it is the goal of ecosystems to do this. They are not superorganisms. Rather, it is a constraint of existence that if living processes are not orderly, antientropic, then they will not persist. The balance of nature calls for a conjugate action-reaction kind of organization that creates order where there could be chaos as a matter of implicit design that simply*

evolved over geologic time … If ecosystems are not cybernetic, then by what other means could the perceived harmony of the biosphere have evolved? (1981: 894).

The idea of ecosystems was first put forward and used analytically among British colonial ecologists, most notably Arthur George Tansley, who developed a mechanistic view of ecology "suitable for creating a system of control of material and human resources in the empire" (Anker, 2001: 2). According to Tansley, the fundamental physical system includes friendly, hostile and inorganic habitat factors:

The amount of matter and energy being constant, ecological factors must add up to balanced cycles of matter and energy. The idea of such cycles, in combination with thermodynamics, was an essential component of Tansley's system of the human mind and of ecology (Anker, 2001: 38).

In other words, the complexity of nature is composed of vast interconnected systems (or circuits) that link all plants and animals, and through which energy flows.

This view needs to be understood in a political economic context where British colonial ecologists argued against South African ecologists, following Jan Christian Smuts, who promoted the paradigm of 'holism', an "idealistic ecology that could solve the empire's environmental, social, and racial problems" (Anker, 2001: 2). Both knowledge networks were in search of tools to understand human-nature and human-society relations to develop administrative economic policies for resource management, population settlement and social control (Anker, 2001: 2). Peder Anker argues that the "main tension in the ecological domain was between South African idealists who thought of nature's economy as fixed (by an omnipotent divinity, according to some), and British mechanists who thought that the economy of nature could be—and should be—planned. The *social order of society* was at the heart of the debate" (Anker, 2001: 4, emphasis added). Whereas British mechanists argued for an "ecological re-ordering of society, nature, and knowledge", South African ecologists aimed to naturalise existing (racial) segregation (Anker, 2001: 4).

Much ecological (ecosystem) work was based on the assumption of local people as inherently destructive – visible in the work of Thomas Ford Chipp, later director of Royal Botanical Gardens, Kew, who wrote that native people caused "'widespread destruction of the natural vegetation ... [of] considerable local economic importance', [because of] 'dense population,' 'movement of tribes,' and 'political insecurity'" (Chipp, 1926: 194; see also Anker, 2001). The colonial administration, with the help of ecologists, was to restore the equilibrium that these people destroyed. This equilibrium thinking was based on connections that Arthur George Tansley made to the physical sciences, to borrow from their legitimacy, and to psychology – he

was fascinated by Siegmund Freud's idea that the human brain was actually an electric machine. The newly created ecosystem knowledge was used directly by colonial resource management agencies, especially the Indian Forest Service, and facilitated by the development of aviation technology that enabled aerial mapping, surveying and classification. It contributed to the globalisation of the discipline and offered to ecologists the overview they required to 'order' the natural world according to imperial interests, "suitable for managerial overview" (Anker, 2001: 116).

Large-scale ecosystem research received a big push in the post-WWII era with the setup of new science programmes in the US, notably the International Biological Programme in the 1960s (Coleman, 2010a: 15). Ramón Margalef's ideas on cybernetics (self-governing, or self-organising) principles in the 1960s and 1970s, David Coleman argues, were crucial for this momentum and influenced "generations of ecosystem scientists" (2010a: 10). It was through the appeal, and shared understanding, of the 'cybernetic machine', to represent the way in which nature was to be controlled, that ecosystem ecologists were able to generate funding and set up a number of prestigious institutions and research programmes— such as the International Biological Programme, funded by the US Congress (Kwa, 1987). Its success was helped by the increasing availability of computers (to facilitate modelling) and the successful application of systems analysis in military and industrial settings around 1960 (Montague, 2014). Computerised techniques had become popular in engineering and were now starting to be applied in systems ecology, generating tools and hypotheses for ecosystem ecologists, who tended to be "fascinate[d] with self-organization, response to disturbance, and emergent properties of ecosystems" (Montague, 2014).

Systems ecology continues to be relevant for adaptive ecosystem management, theories of complex ecosystems, resilience theory, ecological engineering and ecological economics (Montague, 2014), within which biodiversity offsetting is embedded. It suits all too well neoclassical economic worldviews around ideas of equilibration, Pareto optimality and optimisation. It can be found in new conservation paradigms of nature corridors and ecosystem (service) management, based on problematic notions of natural equilibrium, harmony, balance and functional order (Leach et al., 1999), consolidated in the biodiversity "knowledge infrastructure" (Edwards, 2010)[9] and institutionalised in the Convention on Biological Diversity (CBD, 1992), the Millennium Ecosystem Assessment (MA, 2005) and The Economics of Ecosystems and Biodiversity (TEEB, 2010), among many others. The idea of a stable state, of a

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[9] Knowledge infrastructures, Paul Edwards states, "comprise robust networks of people, artefacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds" (2010: 17).

natural balance of nature, which allows for abstraction and separation of different ecosystem functions that can be removed somewhere and replaced elsewhere is crucial for the theorising of offsetting. The remarkable similarity to neoclassical economic conceptualisations of the economy is no coincidence: both rely on the human capacity to model, manage, manipulate and engineer (ecological and economic) systems; to control and restore ecosystem functions or even entire ecosystems and (national) economic processes, respectively. Both are conceptualised as external to social-political processes, as separate entities that can be steered through the use of large-scale aggregate data sets, methodologies, mapping exercises and (GIS) surveying. These are some of the artefacts and practices that are so fundamental for Paul Edwards' infrastructural globalism, supported by the increasing inclusion of global policy objectives into national and EU policy documents. Furthermore, both draw on the same theoretical repertoire around competition, innovation and survival of the fittest.

Nature as ecosystem service provider, nature as Natural Capital

Just as the idea of the ecosystem, initially a radical concept that grew out of 'progressive' colonial social and ecological concerns, helped generate significant funds and mobilise institutions, nature's reframing as natural capital and ecosystem services has come to play a remarkably similar role. Payment for Ecosystem Services schemes – not least carbon markets – have been channelling billions of dollars into conservation projects designed maintain the planet's ecosystem infrastructure (Carroll and Jenkins, 2008). Ecosystem services have been defined as "the benefits people obtain from ecosystems" (MA, 2005). Erik Gómez-Baggethun and colleagues trace the origins of the term to the late 1970s, when ecologists tried to raise public interest in biodiversity conservation, before it became mainstreamed in the 1980s, with the advance of methodological work to calculate the economic value of ecosystem services (2010). In perhaps the most famous (and controversial) ecosystem valuation study, Robert Costanza and colleagues estimated the "value of the world's ecosystem services and natural capital" to lie between US$16 and US$54 trillion per year (1997), later adapted to US$125 and US$145 trillion per year (2014).

The concept of natural capital, the world's stock of natural assets, can first be found in "Small is Beautiful" by German statistician and economist Ernst Friedrich Schumacher (1973) and is now closely associated with ecological economists Herman Daly and Robert Costanza. Both – natural capital and ecosystem services – were quickly picked up by conservation groups, environmental consultants, ecologists and policy makers to frame debates and legitimise certain managerial practices (figure 2). The 2005 MA and particularly the 2010 TEEB report, a global initiative

aiming to end the 'economic invisibility of nature', constituted two milestones in their popularisation and institutionalisation.
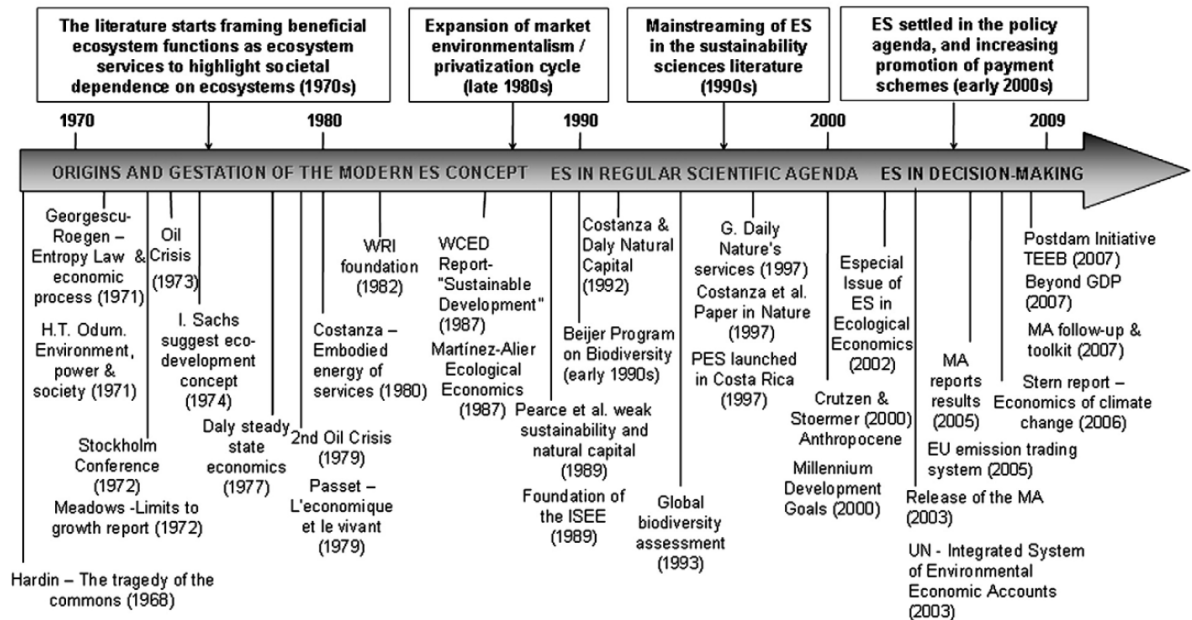
Figure 2 Origins of the ecosystem concept (Gómez-Baggethun et al., 2010: 1213)

This new language was justified by the need to overcome the systematic undervaluation of nature in decision making and the lack of quantification of natural capital for the sake of comparing it with the value of economic services and manufactured capital (Costanza et al., 1997). If valued in monetary terms, previously un(der)valued natural services – or 'externalities' – could thus be more explicitly incorporated in economic decision making to correct alleged market failures (Gómez-Baggethun et al., 2010). This could be accomplished thanks to the expansion of monetary valuation techniques by environmental economists in the second half of the 20th century, based on hedonic pricing[10], observed consumer behaviour, travel cost methods, stated preferences and contingent valuation methods, among others (Gómez-Baggethun et al., 2010). Essential to the ecosystem service/natural capital paradigm are the problematic assumptions that environmental economics inherited from neoclassical economics: the 'Rational Economic Man', the belief in price mechanisms, Pareto efficiency and optimisation, and assumptions about human behaviour – depicting humans as utility maximising, whose preferences can be inferred from (and reduced to) cost-benefit analyses. It further necessitates the discursive commensuration (the creation of equivalence), the

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[10] Hedonic pricing refers to the valuation of ecosystem services which directly affect market prices, often environmental attributes that impact housing prices.

'aggregation' (the calculation of 'net' quantities) and the possible 'capitalisation' (the "leveraging [of] conserved 'standing natures' as capital assets") of nature (Sullivan, 2017b: 66). These enforce human-nonhuman relationships that are stripped of their ecological and social context and uniqueness, and convert nature into universalised and standardised units, to fit the two-dimensional matrices that biodiversity offsetting requires. These processes are constitutive of particular understandings of nature, they 'remake' nature into "third nature" (Hughes, 2005).

In practice, ecosystem services usually have no value until they become business inputs or business risks. The very concept of services detaches the 'service' from the provider – it does not matter what or who provides the service, as long as the service is being provided. Service provision can be natural (e.g. the service of a wetland) or artificial (a water purification plant). While some 'co-benefits' (such as birdlife habitat) may be acknowledged, in essence it is only the service *to humans* that counts, and if human-built infrastructure outcompetes natural services, the incorporation of ecosystem services will lead to loss, rather than conservation of nature.

Both concepts gained momentum in a moment of crises in the early years of the 21st century, legitimising not just Business as Usual, but the intensification of "accumulation by dispossession" (Harvey, 2004) and "accumulation by restoration" (Huff and Brock, 2017), further explored in the next chapter. Initially, they emerged out of frustration with the economic growth-paradigm and constituted somewhat radical tools to draw attention to the loss of nature that sustains human life (as well as 'the economy'). Ernst Friedrich Schumacher, for instance, used natural capital to argue for *downsizing* economic production (1973; Sullivan, 2014). The use of the term was pedagogic, "to demonstrate how the disappearance of biodiversity directly affects ecosystem functions that underpin critical services for human well-being" (Gómez-Baggethun et al., 2010: 1213). Yet, both concepts were soon used by different people with different intents: "Indeed, in its inauguration in both environmental and ecological economics it already meant contrary things, and was used for varied ends and with diverse outcomes" (Sullivan, 2014: 6). Erik Gómez-Baggethun and colleagues explain this with the "slow move from the original economic conception of nature's benefits as use values in Classical economics to their conceptualization in terms of exchange values in Neoclassical economics" (2010: 1216), resulting in application and co-optation for very different purposes than originally intended. Paraphrasing Maria Åkerman, Sian Sullivan argues:

> the polysemic metaphor of nature-as-natural capital, whilst metaphorically strong and heuristically powerful, is analytically weak. This enables the metaphor to perform

different work for different groups of people in diverse contexts, a disparate mobilisation that permits the metaphor to act in the world with varying effects (in press: 7).

The economistic conservation language around these metaphors marks a "discursive shift" (cf. Sullivan, 2014) in the history of conservation paradigms, into which offsetting becomes embedded – reconciling formerly incompatible ideas around ecological conservation and economic growth. This reframing of nature in instrumental and anthropocentric terms opens up the possibility to monetarily value and to assign a price to ecosystem functions. Its importance lies in the way it reinforces a particular world view that is "projected as a universal, value-free system of knowledge, which has displaced all other belief and knowledge systems by its universality and value neutrality, and by the logic of its method to arrive at objective claims about nature" (Shiva, 1996: 268). Its political appeal facilitated the recent hype around offsetting and other so-called market-based conservation instruments – the narrative is used to support offsetting *practices*, and the idea of 'the market' acts as a mobilising device within this narrative. The powerful language then lends ideological support for business representatives to position themselves as saviours of nature and to entrench their powerful position in the global political economy.

From nature as global to local nature: double process of abstraction and managerial interventionism

What has been conserved is an abstraction: a net amount of habitat, which serves as a proxy for a net amount of biodiversity, both of which are located elsewhere ... It exists outside history and has no place (Hannis and Sullivan, 2012: 16).

Paradoxically, it is once the discursive work of turning biodiversity into a 'global resource' in the form of a global ecosystem has been completed, that nature must once again be abstracted and removed from its social and ecological (in as far as these two are separable) contexts to allow for NNLs conservation. Having recognised the interdependence and interconnectedness of this global system, this interdependence is subsequently denied in the acceptance of, and belief in, universality, substitutability, and commensurability of nature. In other words, nature needs to be constructed as one, only to be broken down into many exchangeable parts. The offsetting narrative relies on this creation of equivalence between spatially and temporally separate natures. Only the view of biodiversity as 'global' creates the necessary linkages and interdependencies that allow for offsetting, and only this imaginary and narrative of 'one planetary ecosystem', which encompasses the diversity of local ecosystems, opens up the possibilities for NNL. It now does not matter where nature is saved, as long as the balance is even. Camila Moreno and colleagues have called this reframing of nature "ecological

epistemicide" (2015). In their excellent epistemological and historical critique of the particular ways ecological crises become subject to particular knowledge regimes, they show how

> *quantification has become the chief mode of political communication and is strongly linked to the subjection of all possible social issues to an economic logic. Quantification offers a kind of currency in international exchange and allows for a redistribution of responsibility in governing Planet Earth (2015: 11).*

Simultaneously, the view of nature as one global system fosters an "economy of visibility" (Escobar, 1995: 195), where nature and humanity are ontologically flattened. At the same time, some human activities are pointed out, others ignored. Poor people's activities tend to be singled out, decontextualised, and blamed for environmental destruction – while the failure of supposedly 'rational' exploitation and management practices, which all too often turns out to be less-than-rational, is usually not (Fairhead and Leach, 2003). Based on the colonial legacy of conservation, the poor and their relationship to the land tend to be constructed as 'irrational', as lacking environmental consciousness and as threats to nature. This facilitates the construction of Western experts – and corporate actors – as the saviours of nature. Businesses are positioned as rational and utility-maximising, reacting solely to incentive structures and doing what makes (business) sense. If corporate behaviour leads to degradation, this is due to the lack of internalisation of externalities. Offsetting through avoided loss – the protection of nature that would otherwise be lost – depends on hypothetical baselines against which credits are calculated and loss is modelled. Here, again, the construction of local people as biodiversity risk and the positioning of corporations that offset – regardless of how much destruction they cause elsewhere – as the protectors of biodiversity becomes integral to the idea of NNL (e.g. Seagle, 2012; Brock, 2015).

The framing of ecological crises as 'global' assigns responsibility to managers and scientists, and serves to legitimise a particular political response in the form of neoliberal top-down political projects, corporate-led initiatives and social technologies of governance. This response is embedded in the hegemonic political ideology of economic growth, progress and rationality, and informed by 'objective' (natural) science – manifest in requirements of 'sound science' or 'evidence-based policy making'. Such views feed into the Anthropocene discourse of "we are all in this together" – empowering some actors and solutions over others. The Club of Rome report – a milestone in the 'globalisation' of ecological crises – was followed by a special issue of *Scientific American* on "managing planet earth" (September 1989) – 182 pages of 'expertise' to legitimise and plan this global management – the overwhelming majority written by white, male natural scientists from the global North. The contributions reveal "the essence of the

managerial attitude" and make clear that what is at stake "is the continuation of the models of growth and development through appropriate management strategies" (Escobar, 1995: 193). Rather tellingly, one of the contributors asks: "What kind of planet do we want? What kind of planet can we get?" (Clark, 1989: 48). The globe becomes an "object of appropriation for a collective humanity", invoking associations of heritage and property (Ingold, 2000: 39). All too easily, management becomes interventionism for the sake of ensuring productivity, or, today, sustainable use and ecosystem service provision (Ingold, 2000). As Arturo Escobar describes:

> *'We' have the responsibility to manage the human use of planet Earth. 'We' need to move peoples and nations toward sustainability by effecting a change in values and institutions that parallels the agricultural or industrial revolutions of the past. The question in this discourse is what kind of new manipulations can we invent to make the most of the Earth's [scarce!] 'resources' … But who is this 'we' who knows what is best for the world as a whole? (1995: 193).*

Today's 'we' are Earth System scientists, deciding on planetary boundaries to delimit global management strategies – the "metaphorical engineers" (Castree et al., 2014). The resulting Earth System narratives invite "navigating", as the record-cited synthesis of "Navigating the Anthropocene: improving Earth System Governance" (Biermann et al., 2012) suggests. To navigate, according to the Oxford English Dictionary, means to steer, control, or direct course. Maarten Hajer and colleagues describe this trend as "cockpit-ism"; "the illusion that top-down steering by governments and intergovernmental organizations alone can address global problems" (2015: 1651). Rather than control of planetary systems, Andrew Stirling argues, we should be speaking of "reproducing privilege", leaving power relations and inequalities unchallenged:

> *With the focus on managing 'Earth systems' and 'the planet' itself, the **issue** is more the envisioned object of governance, than the **modalities** … [not targeting] entrenched industrial interests, technological infrastructures or cultures of inequality and consumption, but the natural processes of 'planetary control variables' and 'Earth systems' (2015, emphasis added).*

This managerial emphasis is embodied in particular scientific frameworks, assessments and research programmes. Historically heavily dominated by the natural sciences, Earth System Science, with high-level financial and institutional support, has more recently been opened up to include the 'human dimensions' of global environmental change. The assumption is

> *that people and the biophysical world can best be analysed and modified using similar concepts and protocols (for example, agent-based models). A single, seamless concept of integrated knowledge is therewith posited as both possible and desirable, one focused on complex 'systems' (Castree et al., 2014: 764).*

Earth System scientists include environmental economists, behavioural psychologists, political scientists, researchers of legal, management and business studies, and environmental planners – many of whom focus on altering human behaviour, adjusting monetary incentive structures, examining rules and institutions for sustainability, and promoting green growth (Castree et al., 2014). The exclusion of the vast majority of humanities and less positivist social sciences, and the associated refusal to examine more fundamental structural changes and alternative socio-economic pathways, and to explore the diversity of human values risks "political complicity" to business as usual and adherence to the status quo (Castree et al., 2014: 764).

A good example is the Earth System Governance (ESG) project, one of four Earth System Science Partnership programmes, which "sees an urgent need to develop better governance mechanisms and institutions at all levels to cope with this emerging earth system transformation" and speaks directly to policy makers. Its Science Plan, the ESG's guiding document, starts with the same depoliticising and homogenising language that we may recognise from Anthropocene and planetary boundary discourses: "Humans now influence all biological and physical systems of the planet. Almost no species, no land area, no part of the oceans has remained unaffected by the expansion of the human species" (Biermann et al., 2009: 4). The task is clear: the ESG Partnership has declared the "'urgent need' to develop 'strategies for Earth System management'" (ESG, n.d.). The institutional fragmentation of earth system governance is seen as a major reason for failures to effectively address environmental crises; the lack of a "coherent, systematic, structured system of global environmental governance" (Biermann and Pattberg, 2012: 265). It feeds into advocacy for a World Environment Organisation, a new specialised UN agency to cooperate closely with the Bretton Woods institutions (Biermann and Simonis, 1998), which calls for privatisation and allocation of property rights – enhancing "global managerialism [that] seems to consolidate the power of the already powerful" (Newell, 2001: 43).

We can further observe the use of a particular systems thinking introduced above; future-oriented long data runs, statistical modelling and scenario research to understand and solve environmental crises; models that, as Ariel Salleh suggests, "tend to abstract, conflate or reify grounded ecological, social and embodied processes" (2015: 435), based on new criteria of evidence, validity and reliability. Embedded in ideas of rationality, objectivity and universality, ESG thinking is "embodied in this ideology of modernization", operating with an 'flat earth' model that is depoliticising and homogenising, and based on linear thinking of cause and effect, predictability and control. "The result is not science, but ideological scientism" (Salleh, 2015: 436). This is taken even further in the casual calls for "large-scale geo-engineering projects … to

'optimize' climate" by natural scientists such as Paul Crutzen (2002). The recently initiated "Carnegie Climate Geoengineering Governance Project", directed by Janos Pasztor, senior advisor to the UN secretary-general on climate change, points to increasing embrace of geoengineering also by UN bodies (Carnegie Council, 2016). The resemblance to Arturo Escobar's analysis is remarkable: "Once again, we find the familiar figure of the Western scientist turned manager … it is still assumed that the benevolent (white) hand of the West will save the Earth" (1995: 193). Western scientific expertise is used by international conservationists, governmental authorities and NGOs "to legitimise their control over the 'last tropical forests' by claiming that ultimately they are the only ones who have the necessary knowledge and expertise to devise feasible strategies of protected area management" (Nygren, 2003: 47).

Intersecting with this framing – and constituting the other side of the 'corporate conservation coin' – is the construction of 'nature as risk' that will now be explored.

Nature as risk, nature as profit: securitising (against) nature

The framing of nature as risk to corporate bottom lines allows for its quantification, incorporation into business operations and management. But what exactly is the 'risk' associated with nature, and how was it created? Michael Power traces the recent history of the pervasive narrative of risk and risk management, arguing that in a short time period, many public and private sectors (including universities and hospitals) have been transformed around discourses of financial, health, legal and political risks; institutionalised into standardised organisational forms (2007). He sheds light on the role of "managerial and administrative practices organized for the explicit purpose of representing and handling risk" (2007: 4-5). The *language* of risk has become embedded in the neoliberal logic of opportunity, enterprise and value creation (Power, 2007). However, while difficult to quantify, corporate risks of legitimacy and reputation are not inherently *uncertain* – in fact, corporations invest considerable financial resources in mapping resistance, undercover intelligence and hiring consultancies and PR firms to face these risks (Lubbers, 2002, 2012). Rather than dealing with "a world which is out of control" (Power, 2007: 5), with an uncertain future and unknown effects of biodiversity loss on operations, these corporate risk management strategies manage well-known yet difficult-to-predict risks of *resistance* and *regulation* – made more legible and predictable through political lobbying, data collection and a diversity of strategies to co-opt, divide-and-conquer and suppress resistance (Brock and Dunlap, 2018).

In this context, offsets thus constitute "an implicit invitation and incentive to go from risk prevention and precaution to risk management" (Lorch, 2008), embedded in a culture of frameworks, benchmarks, procedures and mechanisms to 'perform sustainability'. These procedures are meant to manage corporate biodiversity risks through "highly rationalized and mechanistic procedures … designed to safeguard the company by minimizing disruption, loss or damage to corporate reputation or business operations" (Kemp, Owen and van de Graaff, 2012: 3).

However, risk is a social relation (Soederberg, 2016). While biodiversity loss has become a risk to corporate legitimacy and reputation, to facilitate the financialisation and economic exploitation of this risk, international bodies, such as the World Economic Forum, have worked hard to "constitute biodiversity loss as a material risk to the 'bottom line' calculations of investors and insurers" (Dempsey, 2013: 41). Through discourses, reports and new calculative devices they aim to "render biodiversity loss legible in the language and metrics of financial risk" (Dempsey, 2013: 41). These efforts are supported by the World Business Council on Sustainable Development (WBCSD), whose work appears to be dominated by the extractive industries[11] (Moody, 2001), by leading environmental institutions such as the IUCN, the World Resources Institute and the United Nations Environmental Programme (UNEP)'s Finance Initiative, by investment firms and industry consultants such as PriceWaterhouse Coopers and McKinsey & Company (e.g. pwc, n.d.), and in collaboration with business schools, other academic institutions and NGOs (WWF, n.d.a). WWF, for instance, has been collaborating with Aviva Investors and Investec Asset Management to position biodiversity loss as a business risk through colourful interactive websites and reports (figure 3). The organisation further participates in the Natural Capital Finance Alliance and has developed novel mapping tools (in collaboration with the University of Oxford and the Simon Fraser University, among others) to make these risks legible and manageable (WWF, n.d.; WWF-Sight, n.d.).

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[11] The WBCSD was established just before the UN Conference on Environment and Development (UNCED) in 1992 by Stephen Schmidheiny and Maurice Strong ('Czar' of UNCED). Maurice Strong had an interest in oil and mining (through Ontario Hydro and PetroCanada) and Stephen Schmidheiny was associated with Holderbank, the world's second largest cement producer, and sat on the boards of Nestlé and the Union Bank of Switzerland (Moody, 2001). In 1999, following a 'stakeholder dialogue' with trade unions, academics, churches and indigenous peoples and civil society groups, the WBCSD published a report ("Meeting Changing Expectations") that showcased the industry's CSR engagement – authored by Phil Watts (Shell International) and Lord Richard Holme (director of Rio Tinto) (Moody, 2001).
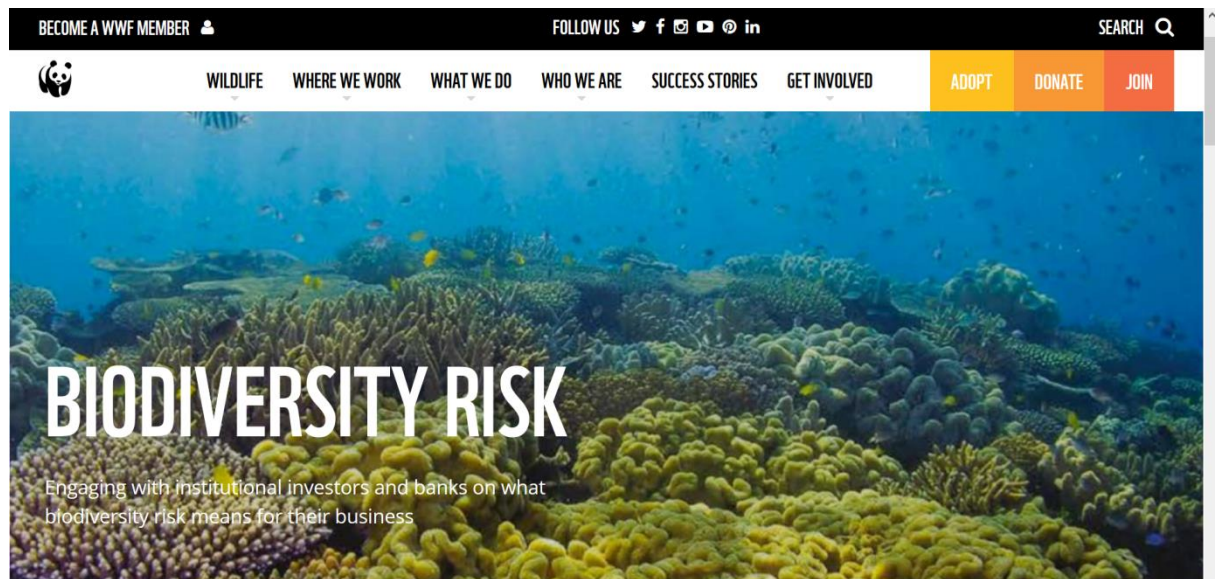
Figure 3 Biodiversity risk as business risk (WWF, n.d.a)

The biodiversity risk is constructed as a 'neoliberal risk', "optimistically situated as an opportunity for innovation and accumulation that cannot only be managed but profited on" (Emel and Huber, 2008: 1397). As the WBCSD states: "Somebody's risk is someone's opportunity" (in Dempsey, 2012: 42) – be it an investment opportunity, restoration profit or biodiversity offset. This is a securitisation in the social sense, where corporations are required to deal with biodiversity for the sake of legitimacy to protect their bottom lines, rather than a financial practice.[12] Fundamental to this securitisation process have been initiatives that provide the data, tools and methodologies required, including the EU's Mapping and Assessment of Ecosystems and their Services programme, part of the European Biodiversity Information System for Europe. IUCN, in collaboration with the Biodiversity Consultancy, BirdLife International and Vulcan Inc., a private company set up by Microsoft co-founder, investor and philanthropist Paul G. Allen, created a Biodiversity Return on Investment Metric that "measures the contribution that investments can make to reducing species extinction risk" (IUCN, 2017: 1). The various mapping exercises are fundamental for the categorisation and classification of 'Europe's nature' (into no-go areas and go-areas), making it legible, governable, and offsettable.

These risks are then *managed* to "yield opportunities" (Soederberg, 2016: 6), and offsetting is positioned as an *insurance mechanism*. "Biodiversity business risks", Jessica Dempsey argues, "are a crucial part of the promissory 'green economy', an economy that acknowledges and manages the risks to ecosystems and biodiversity by finding new sites for opportunity and profit, while at the same time 'saving the planet'" (2013: 42). To facilitate the exploitation of

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[12] The latter refers to the financial practice of pooling debt and selling cash flows as securities against this debt.

these opportunities, in the transnational offsetting community (and specifically within BBOP), much work and resources have gone into establishing the 'business case' for biodiversity (offsetting) (e.g. IUCN, 2011; NABU, 2013; UNEP and WCMC, 2010; FFI, 2011; iied, UNEP and ECMC, 2014), discursively positioned around the regulatory risks, but especially the operational risks posed by biodiversity loss. This construction as 'risk' is grounded in diverse collaborations and partnerships with NGOs, conservation organisations, academics, practitioners and consultants. As one environmental consultant, when describing their corporate environmental impact assessment work, explains to me:

> *[After having finished your work you] end up with [a] risk matrix! With numbers in it … [But we know:] This is gonna be a hard sell … [So we tell the client:] 'This is a corporate risk, a risk of public perception and negative campaign'. [We tell them:] 'You need to understand your share prices may go down' (B7).*

Risk assessments have come to form the basis for an entire industry of auditors and consultants (explored below) who reproduce and stabilise the notion of risk. These assessments are now required by many of the international institutions whose (financial) backing industries rely upon. The World Bank's Extractive Industries Transparency Initiative (EITI), for instance, requires public disclosure of all revenues collected from natural resource companies for the extraction of oil, gas and minerals, and has established an external verification process. Following pressure from the EBRD (among others), these assessments have become part of investment rating agencies, who have further included membership in the EITI into their risk assessments of resource-rich *economies* (Smuts, 2010: 11), thus incentivising not only companies, but mining host *countries* to engage with biodiversity risk management, too.

The production of a nature as risk that "capital can see" (Robertson, 2006) and – more importantly – that can be offset – requires calculative devices that serve to ascribe values of risk from biodiversity loss to businesses (Dempsey, 2013). As Larry Lohmann argues, "the tasks of disentangling, isolating, commensurating and 'thingifying' uncertainties" – or risks – involves "painstaking, innovative, contingent political work by a variety of interested actors" (2010: 229). This is the work that occurs in the places and spaces of offset-making – in consultants' offices, in corporate boardrooms, and the transnational conferences and meetings explored below. These places and spaces are infused with power relations, human interactions, personal dynamics, professional relationships and friendships, which intersect and shape the framings and discourses introduced in this section. These discourses are responsive, dynamic and flexible. Indeed, their very power lies in this adaptability to changing political economic and legislative requirements and their capacity to reproduce, co-opt and incorporate critique – just as the

green economy discourse itself. The 2016 World Bank report on offsetting, for instance, clearly engages with civil society critiques and critical media coverage (e.g. Monbiot, 2012; Carrington, 2013):

> *Enabling Destructive Projects? Biodiversity offsets are sometimes viewed with scepticism because of concerns that they may provide a "license to destroy" by facilitating the approval of environmentally highly damaging projects. However, biodiversity offsets are intended to improve the net biodiversity outcomes from development projects that are considered to be more or less inevitable, and where the mitigation hierarchy (avoid, minimize, restore, and then offset any significant remaining damage) has already been applied. In such cases, the real question might not be whether the project will be built, but how, when, and with which financing. As a conservation tool, biodiversity offsets would not appropriately be used to facilitate habitat losses or harm to species that otherwise would likely not take place at all (Ledec and Johnson, 2016: 13).*

One of the strengths of offsetting projects, I argue in this dissertation, lies precisely in this ability to engage, to bring together, to form partnerships and novel alliances, incorporating and pacifying resistance and discontent.

Having introduced the discourses and narratives within which offsetting is embedded and legitimised, I now examine the individuals and organisations involved in (re)producing these discourses and offsetting practices.

3.2. Introducing the *offsetting industry*

> *We – the financial institutions, conservation organizations, governments and industry [that are involved in biodiversity offsetting] – working in this space are part of a growing Community of Practice (Conzo, 2012, representing the IFC).*

Entire new industries have been developing *for* and *through* the green economy, and neoliberal conservation practices more specifically. They are organised in, and themselves structure, new political spaces where policy instruments are negotiated and institutionalised – such as the places and spaces of offset-making introduced below – and connect those sites and initiatives. The community of practice that Anna Conzo describes above – which I call the *offsetting industry* – is one such industry. It resembles Peter Haas's "epistemic community", a "network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy relevant knowledge within that domain or issue-area" (1992: 3). These professionals "physically and ideologically migrate across the once well-defined boundaries separating governmental agencies, non-governmental organisations (NGOs) and the private sector" (MacDonald, 2010b: 256-7) – as well as academia. The community is "small and interactive", tightly interwoven, with close personal relationships and "actors circulat[ing] between the various organizations" (Benabou, 2014: 110).

These institutions and individuals play different (but overlapping) roles in offset-making in Europe, fundamental to its *normalisation* and *institutionalisation*. In this section I explore their roles, and categorise them as:

- **offset-drivers** (e.g. through financial sponsorships)
- **legitimacy-lenders** (playing ideological roles in the normalisation of offsets, possibly public facing)
- **connectors** (linking across places and spaces, informing policy and corporate practice)
- **risk translators** (turning biodiversity into corporate risk and translating into 'the language of business')
- **innovators** (developing metrics, technologies, techniques)
- **knowledge-producers** (through data collection)

Business and Biodiversity Offset Programme

I start this investigation with the single most important driving force behind offset-making in Europe and central point in the network of the *offsetting industry*: the Business and Biodiversity Offset Programme (BBOP), established in 2004 by Kerry ten Kate as part of Forest Trends, an advocacy organisation that aims to "conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets and other payment and incentive mechanisms" (Forest Trends, n.d.). BBOP is a partnership of over 80 companies, government bodies, financial institutions and nongovernmental organisations with the goal to disseminate biodiversity offsetting. It consists of an advisory group, an executive committee, a secretariat and regular members: companies with biodiversity footprints to offset (mainly from the mining, infrastructure and energy sectors)[13], service providers (i.e. environmental consultants)[14], financial institutions[15], governments and intergovernmental organisations[16], conservation and civil society groups[17], and individuals. After years of lobbying,

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[13] They include Ambatovy Project, Eiffage, Électricité de France, ERAMET, Luossavaara-Kiirunavaara AB (LKAB), Newcrest Mining Limited, Solid Energy Coals of New Zealand, Sveaskog, Tahi Estate and TOTAL SA.

[14] They include Arup, Biotope, Daemeter Consulting, deVilliers Brownlie Associates, Earth Trade, Ecoacsa, EcoDecisión, Environmental Resources Management, Golder Associates, Markit Environmental Registry, Namibian Uranium Association, Nature Task, Poulton Environmental Strategies, Proforest, Resource Environmental Solutions, LLC, Response Ability, Inc., SLR Consulting, Treweek Environmental Consultants, The Biodiversity Consultancy, Environment Bank, Tonkin and Taylor, Wave Action, Wild Business and Wildlands Inc.

[15] They include CDC Biodiversité, Citi, European Bank for Reconstruction and Development, Global Environment Fund, IFC and Inter-American Investment Corporation.

[16] They include a number government departments/ministries/local governments, including the Namibian Ministry of Mines and Energy, IUCN, international conventions and UN bodies.

[17] They include African Wildlife Foundation, BirdLife International, Brazilian Biodiversity Fund (Funbio), Conservation International, Environmental Defense Fund, Fauna & Flora International, Forest Trends, Rainforest Alliance, Royal Botanic Gardens, Kew, The Nature Conservancy, WWF-UK and others.

publishing and networking, BBOP has developed into the most powerful and widely recognised authority on offsetting. Its main roles could be described as **offset-driver, connector** and **innovator**. BBOP's offsetting standards and design guidelines (e.g. BBOP, 2009, 2012) have travelled through the offsetting world and been picked up by international financial institutions, conservation organisations, national governments and corporations alike, becoming governance norms and standard setters (Penca, 2015). Their success may lie in the perfect fit with the demands of Power's audit culture (1996): the emphasis on measurable outcomes, standards, best practice and making operations auditable (rather than accountable). BBOP promotes offsetting across the world; through pilot projects, publication of toolkits and principles, regular offsetting trainings, and webinars. BBOP members chair discussion groups, such as the LinkedIn NNL group, organise meetings, publish newsletters and provide an online 'offsetting library', while fostering the Community of Practice. The organisation was initially sponsored by the Alcoa Foundation, the Australian government, USAID, the IFC, Richard and Rhoda Goldman Fund and the German development bank kfw (Darbi et al., 2009). Its 2014 conference sponsors – **offset-drivers** – included major construction and infrastructure companies, banks and conservation organisations (figure 4).

While BBOP can be described as more than the sum of its parts, one key individual stands out: founding director Kerry ten Kate. Kerry ten Kate enjoys privileged access to policy makers and high-level corporate representatives alike. A former barrister, she served on the Secretariat of the UN Conference on Environment and Development in 1992, then founded the consultancy Environmental Strategies, worked as policy adviser at the Royal Botanic Gardens (Kew) and as Director of Investor Responsibility at asset manager Insight Investment. As BBOP director, she advises governments, intergovernmental organisations, companies, banks and NGOs on NNL and Net Gain of biodiversity policies. Kerry is a member of the UK's Natural Capital Committee, IUCN's Species Survival Commission, the Aldersgate Group and a Conservation Fellow at the Zoological Society of London (ZSL). She has written over 100 papers, book chapters and articles (including for *Science* and *International Affairs*), and has broadcast for BBC Radio 4 and the World Service. Research participants describe her as "very charismatic" and a "great networker" (C2), and fundamental to BBOP's success and the promotion of offsetting in Europe – "the 'visionary' and embodied presence of the offsets agenda" (Benabou, 2014: 111).

Figure 4 BBOP conference sponsorship

An army of *environmental engineers*

> *SRK [consulting] UK and SRK South Africa have been involved in [EISAs] for mining, transport and dredging in the undisturbed rainforest of the Guiana Shield. As well, SRK UK undertook an … [ESIA] for the Malmbjerg Molybdenum Project in Greenland within the Arctic Circle, where breeding and moulting areas for Pink-footed geese and Barnacle geese exist. Both these species have high global conservation value. We are working to recommend appropriate offset areas that help protect these valuable species (Morrill, n.d.: 11).*

The second most important driving force is the army of *environmental engineers* that consists mainly of environmental consultants and biodiversity advisors – many of them BBOP members – who have been crucial to offset-making in international offsetting-spaces and local offsetting projects. Consultants play a crucial role in neoliberal managerialism and audit culture, facilitating the outsourcing of corporate tasks and responsibilities to 'specialists', and

contributing to securitisation against biodiversity risk. Many of them trained ecologists, they act as **knowledge producers**, **risk translators** and **innovators**. In their role as **connectors**, they link up corporations and NGOs, and catalyse corporate conservation partnerships (see chapters four and five). Translation of (and securitisation against) biodiversity risks for corporations and investors takes place in and through these partnerships and their institutionalised forms, such as the EU Business@Biodiversity dialogue: "Compensating for development impacts on biodiversity can accelerate regulatory approval for development, enhance reputational value and secure additional finance for conservation" (Rayment and McNeil, 2014: 5). Environmental consultants are involved in every step of the offsetting process, from lobbying, planning, designing, implementing and monitoring offsets, producing the necessary methodologies and tools for their work and undertaking many of the political negotiations. They often enjoy high levels of trust and possess significant levels of power. One high-level consultant explains to me:

> *As senior ecologist, you have access to the president of the company … They believe you are working middle road, compromises … that is gonna give them a biodiversity licence to operate… It's important for a consultant to be always the same person, say the same things to NGOs, government and mining company… [I have to tell them:] It's gonna be green, it's gonna be good, there's gonna be some lemurs, but it's not what you had before (B2).*

A very small number of consultancies – most of them UK-based – seem to be dominating the field and re-appear in the multiple places and spaces of offset making, including the EC negotiations – most notably the Cambridge-based The Biodiversity Consultancy (TBC). TBC has worked with or for nearly all big offsetting players: BBOP, major corporations (Shell, Rio Tinto), governments (UK, New Zeeland), conservation organisations (Flora and Fauna International, IUCN), and the International Council on Mining and Metals (ICMM, introduced in more detail in chapter five). The consultancy has collaborated with both the IFC and the EBRD (chapter four) to develop their new environmental lending requirements – and set up offsetting projects to pilot these requirements – and published industry briefing notes and so-called independent reports (see also Benabou, 2014). Other important consultancies include Gelders, eftec and Bio3; all occasional or regular members of the NNL working group, analysed in chapter four.

Scientists and academics

The boundary between biodiversity consultants (or "private sector scientists", Lave and Robertson, 2017) and academics is blurry. Offsetting projects frequently involve academic collaborators, and consultants publish in academic journals and advise policy makers. *Conservation Letters*, for instance, published "A process for assessing the offsetability of biodiversity impacts" in 2013; a 'policy perspective' co-authored by ten consultants (including

Kate ten Kerry), a then-government employee (who now works in the petrol industry) and a university zoologist (Pilgrim et al., 2013). Some consultants combine their consultancy work with (visiting) lectureships in ecology or conservation science, others move back and forth between the two sectors. Joseph Bull, for instance, director of the environmental consultancy Wild Business Ltd. as well as lecturer at the University of Kent, and two collaborators are working on an EC-funded Marie Curie Research Fellowship on NNL. Guy Duke from the Environment Bank (a private company working to 'broker' offsets for developers and landowners in the UK) is also a Senior Visiting Research Associate at the University of Oxford, as well as an evaluator of environmental research and Marie Curie proposals, and previously worked for the EC's DG Environment where he helped launch TEEB and designed the 2006 EU policy that introduced the concept of ecosystem services to EU legislation (EC, 2006).

This revolving door effect and the involvement of consultants in academic publications and spaces (such as conferences and talks) has been important for the normalisation and exposure of offsetting and the involvement of university scientists, but also the academic debate about offsetting (including through mutual citations). Academics can serve as **legitimacy lenders** and **knowledge producers**, further normalising and 'professionalising' offsetting. Their work is fundamental to the quantification and evaluation of ecological impacts and the construction of offsetting currencies and ratios explored below. Most importantly, maybe, they enjoy an image as 'objective' and 'non-political', which other actors lack.

Conservation organisations

Large conservation organisations such as WWF, IUCN and the Nature Conservancy have positioned themselves at the forefront of offsetting advocacy, and the language they use has become almost indistinguishable from corporate lobby work. The example of Jason Clad illustrates this point. Not knowing that Jason works for WWF, he could easily be mistaken for a CEO, as he proclaims on stage of the 2013 Natural Capital forum: "Governments don't create markets. Markets create markets!" He embodies the repositioning of conservation in the interest of growth, also visible on his WWF expert web profile: "Our goal is to figure out how to *produce more* with less land, less water and less pollution, so we won't be the only species left living on this planet" (WWF, n.d.b, emphasis added). Conservation organisations are essential to the task – he himself, it is claimed, "gets things done on a global scale. His ideas are changing the way governments, foundations, researchers, and NGOs identify and address risks and opportunities for their work" (WWF, n.d.b). The latter hints at one the most important roles of conservation organisations as **risk translators**. Not only do they translate risks for their corporate

partners, but they are essential in the construction of biophysical risks in environmental policy making more generally (Forsyth, 1999). The role of conservation organisations will be explored in much more depth in later chapters. Suffice it here to say that they have been fundamental to the development of offsetting both globally and within Europe, as **offset-drivers, legitimacy lenders** and **providers** of the **ecological expertise** required for offsets.

Restoration industry

A Trophy Restoration: Berner Construction helped transform old mines in Pennsylvania into grazing land for the state's wild elk. The clean-up was complicated, the job site remote. Berner's Cat® D11 dozers were up to the challenge (CAT, n.d.).

Contractors should keep their eyes and ears open for these emerging projects. When there's a lot of land to move, there's a lot of money to make. This emerging market trend could mean big business for your companies (Lombardo, 2015).

As these two quotes – the first one from Caterpillar's corporate website and the second from construction news provider *ForConstructionPros* – illustrate, land restoration has become business. In the US alone, the US$25 billion per year *restoration industry* employs more people than coal mining, logging, or steel production (Barrett, 2015). The restoration economy is driven not just by legislative demands for reclamation of mining sites but also the machinery industry itself, which acts as **offset-drivers**: construction giant Caterpillar, involved in design, development, production and marketing of machinery and engines, for instance, aims to

catalyz[e] the industry of natural infrastructure restoration ... to engage in a discussion on the need for and the benefits of restoring degraded natural infrastructure – such as forests, prairies, agricultural lands, estuaries, coastal landscapes and wetlands – as well as the opportunities it offers with respect to the global sustainable development goals (Caterpillar, 2015b).

Consultants hail the restoration economy (closely associated with (eco)tourism and recreational industries) as "the Future of Environmental Markets" (Kelly, 2015). The restoration economy will be introduced in more depth in chapter four.

Corporate pioneers

To appeal to the corporate community requires the engagement of 'big-name' CEOs, such as Jochen Zeitz, former CEO of PUMA[18], chair of Harley-Davidson's sustainability committee, co-chair of The B Team with Richard Branson and recipient of the Special Advocacy Award for Responsible Capitalism, who spoke at the 2013 Natural Capital forum. Indispensable to the corporate conservation scene is the head of the WBCSD, Peter Bakker, whose appearances have

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[18] PUMA gained international attention upon publication of their 'environmental profits and loss account' in 2011.

become almost obligatory. His role is to reproduce the ideologies introduced above, getting corporate actors on board and constructing industry involvement as the solution, not the problem. In his usual style, positioning himself as "one of the good guys", he appeals to civil society to "speak the language of business":

> *We were still talking about Ecosystem degradation and biodiversity loss and I said: why don't we talk about natural capital, then we get business on board … The world is in a systemic crisis. Governments cannot lead us out of there … [We businesses have to] come up with innovative business solutions … improve business case … [and] collaborate.*
>
> *Give me a 100USD per ton of carbon and the world will fix itself (NC2013).*

Corporations are assigned agency: "Business people are the ones doing things", he proclaims at the 2014 BBOP conference, and explains to participants: "You just have to remember four words: plan, do, check, act!" In effect, corporate pioneers position business as rational, responding to demand and supply dynamics and following the 'logic of finance'. Governments are encouraged to incentivise, steer and provide finance to de-risk conservation activities and investments (e.g. through the EIB's Risk Sharing Instrument, and the EC's Horizon 2020). Corporate pioneers thus act as **legitimacy lenders** and **connectors**.

Conservation celebrities

High-level corporate conservation events tend to be opened by conservation celebrities and political actors – **legitimacy lenders** – to attract participants and media attention, to convey the urgency of 'the problem' and to position 'the event' as essential to its solution. The 2015 Natural Capital forum in Edinburgh, for instance, was launched by Scotland's First Minister Nicola Sturgeon, and featured a video message by His Royal Highness Prince Charles (figure 5), reminding participants that the "health of the economy depends on the health of the planet" and that it is due to the economic invisibility of nature that its value is not taken into account (covered on BBC: Kinver, 2015).

Figure 5 Royal opening (World Forum on Natural Capital, 2015a)

The appearences of conservation celebrities and political stars sometimes resemble spectacular performances (see third section) on their own, such as Tony Juniper's keynote speech at the 2013 NC forum and the presentation by a famous nature film maker, accompanied by a spectacular video installation in the background. Tony Juniper, former director of Friends of the Earth and now head of WWF, is one of the 'rock-stars' of the conservation scene, as well as well-networked fellow of the University of Cambridge Institute for Sustainability Leadership and advisor to companies (including Danone, Interserve and Skanska) on their environmental 'performance'. Conservation celebrities can create enthusiasm and get business leaders on board.

Key individuals that travel across spaces

It is hard to overestimate "the importance of individual relationships" and "personalities" in the world of offset-making, I'm told by one environmental consultant, particularly in corporate offsetting projects: "You need to know the IFC standards, et cetera, but nothing is gonna happen if you have no trust relationship with the client" (B2). A number of key individuals have been crucial to this network building and the development of relationships – most importantly Kerry ten Kate, introduced above. Another important and well-travelled individual is Julia Marton-Lefèvre, IUCN's Director General, former Rector of the University for Peace, Executive Director of The International Council for Science and on the boards of the UN Global Compact and several academic institutions.

As already apparent, many of these individuals' careers have involved crossing the boundaries between governmental and non-governmental organisations, civil society and corporations and engaging in consultancy work, spreading offsetting ideas across sectors. Consider Eric Swanson, speaker on the Biodiversity Offset Demands panel at BBOP's offsetting conference in 2014. Now

Chief Operating Officer at Forest Trends and Ecosystem Marketplace, he worked as managing director of Conservation Finance and Strategies at WWF (BBOP conference sponsor), where he "oversaw development of sustainable financing for highest-priority programs", according to his Linkedin account. In his 10 years at WWF, he launched initiatives in biodiversity banking and headed a team that secured $391,000,000 from conservation finance mechanisms and deals, as well as funding through carbon offsets. Similarly, Glyn Davies, now executive director of global programmes for WWF and former academic researcher, previously worked for the EC and the ZSL, before joining WWF. Kirsten Hund, who delivered a presentation on the Scoping and Design Stages of NNL systems, is a senior mining specialist in the World Bank, former WWF regional advisor on extractive industries and environmental consultant. Michael Jenkins, founder and president of Forest Trends, used to be a World Bank advisor and worked for USAID and the Peace Corps. 'Independent' consultant Sally Johnson previously worked as an environmental specialist at the IFC and for the World Bank, as principal scientist at Rio Tinto, and wrote ICMM's Good Practice Guidance on Mining and Biodiversity as well as internal guidance and policy documents for several mining companies. Jonathan Ekstrom, director of The Biodiversity Consultancy, has worked for civil society organisations, as scientist, for the mining and oil industries, in the forestry sector, the government and the financial sector. He has not only involved in design and implementation of Rio Tinto's biodiversity strategy, but also the IFC's Performance Standard 6 which mandates offsetting (see chapter four), as well as in Rio Tinto and BirdLife International's conservation partnership.

These individuals (representative of others) are behind the numerous 'private sector publications' around offsetting, they are involved in policy advice, corporate projects and pilot studies, and through the presentations of these studies and pilot projects contribute to the discursive normalisation of offsetting – as well as 'making it happen on the ground'.

Partnerships

The offsetting actors introduced above unite in novel alliances and corporate-conservation partnerships that are grounded in – and institutionalise – offsetting (as explored in more depth in chapters four and five). They form part of a larger "non-profit industrial complex that results in the surveillance, control, derailment, and everyday management of political movements" (INCITE, 2014) and helps pacify and co-opt resistance in- and outside of conservation movements (see also Dauvergne and LeBaron, 2014). These partnerships are by no means uncontested: FoE International, for instance, withdrew its membership from IUCN in protest

against their corporate partnership with Shell. Similarly, they have triggered controversy *within* conservation organisations (e.g. MacDonald, 2010b).

These partnerships involve many of the quantitative and spatial tools and technologies that are essential for the construction, translation and legibility of risks (Dempsey, 2013). With these tools comes the creation of knowledge and expertise empowering conservation organisations and the construction and spread of large-scale data that facilitates further monitoring and surveillance. This data not only translates into power and social control, but also new business opportunities for conservation organisations and consultancies, while shaping corporate priorities (Dempsey, 2013: 48). The EC has been financially supporting such collaborations by means of the Business and Biodiversity programme, funded through LIFE, the main financial instrument with which the EU finances environmental, nature conservation and climate action projects.

The *offsetting industry* plays a major role in the (re)production of the transnational offsetting discourses introduced in the first section, and the industry itself is constantly reproduced in the transnational conferences that form offset-making spaces in Europe. It is to those localised manifestations of transnational offset-making that I now turn.

3.3.   The spectacular performance of conservation

Having outlined the discourses and narratives within which offsetting is situated, and introduced the offsetting industry that spreads and translates these discourses, I proceed to explore some of the 'places and spaces' where Europe's nature is made offsettable. These places and spaces can be on- and offline – physical meetings and conferences, written publications and reports, glossy brochures and fancy websites, webinars, YouTube clips and many more. Ecosystem Marketplace, for instance, an internet platform run by ForestTrends with the aim to "facilitate [environmental market] transactions (thereby lowering transaction costs), but also catalyze new thinking and spur the development of new markets and the infrastructure that supports them" (Ecosystem Marketplace, n.d.b), not only provides news on environmental market developments, but also constitutes a job-advertising site for the offsetting industry. In this section, however, I focus on the transnational conferences where offsetting is being showcased, negotiated and normalised. Following Kenneth MacDonald (2010b), I see these conferences as political sites that render legible the institutionalisation of particular conservation paradigms and ideas. It is here that sustainability is 'spectacularised', where the offsetting industry comes together and is reproduced, networking takes place, success stories are shared, and offsetting becomes 'a thing'. This may occur without much

mentioning of offsetting: in discussions around mitigation hierarchies, NPI and NNL, which act like placeholders for offsets; That-What-May-Not-be-Named. And yet, it is omnipresent: how else would NNL ever be achieved?

The first of the three sites that have played important roles in offset-making in Europe and will be drawn upon to illustrate my arguments is the inaugural W006Frld Forum on Natural Capital in Edinburgh in November 2013 (2013NCf). It was organised by the Scottish Wildlife Trust in association with UNEP, the IUCN, the WBCSD and the Natural Capital Coalition, attended by over 500 delegates from 35 countries. The second forum (2015NCf) took place two years later, in November 2015, in Edinburgh again and attracted 600 attendees from 45 countries. The third event I attended was the 2014 BBOP No Net Loss conference (2014NNLc) in Regent's Park, co-organised by Forest Trends, BBOP, ZSL and the British Department for Environment, Food & Rural Affairs (DEFRA). The BBOP conference is explicitly built and structured around the role of offsetting in achieving NNL: aiming to "[p]rovide advice on the design and implementation of mitigation measures, offsets and conservation banks to those who need it" and to share experiences and best practice (BBOP, n.d.). The Natural Capital forums' remit was wider. In fact, as will be discussed below, whereas offsetting was openly discussed at the 2013 forum, it was much less 'present' in 2015, by which time the concept had become more contested by civil society and mainstream media. The Natural Capital forums, according to the Scottish Wildlife Trust, are meant to promote "global action to protect and enhance natural capital, within an ethical framework, for the benefit of society, our economy and the natural environment" and to demonstrate "how profound change can only happen if business leaders, NGOs, governments and others collaborate" (World Forum on Natural Capital, n.d.).

I approach these conferences through the lens of *spectacle* and *ritual*, both of which will be briefly introduced. In his original work on the role of spectacle in mediating social and environmental-human relations, French philosopher Guy Debord introduced spectacle as the consequence of the penetration of 'commodity' into mass communication (1967). He put forward a number of propositions. Most importantly for this research were his notions of spectacle as imposing a sense of unity onto "situations of fragmentation and isolation" (i.e. controversies around offsetting), as "an omnipresent justification of the conditions and aims of existing systems" (to legitimise corporate activity 'as usual'), "condition[ing] people to be passive while sending them a continuous message that their only viable path to action and efficacy is through consumption" (i.e. pacifying dissent) (Debord, see Igoe, Neves and Brockington, 2010: 492). Spectacle makes "everything appear … as a commodity" by "presenting the world in terms of quantitative objects imbued with an inherent exchangeability"

with the aim to ensure "its own reproduction and thus the reproduction of the conditions that produced it and the relationships that it mediates" (Igoe, Neves and Brockington, 2010: 492). Spectacle can serve as an instrument for ideological and material domination, Kenneth MacDonald argues (2010b), which conditions people to be passice observers, rather than active agents. Whereas first developed in reference to the mass media, here, spectacle targets (communication to) more specific audiences: the (corporate) conservation and corporate communities (though certainly encouraging media outreach too).

The second analytical device is Victor Turner's concept of *ritual* (1969). Rituals are defined as patterns of acts that construct frameworks of meaning that go beyond the specific situational meaning (cf. Bernstein, 1975). Ritual, Robert Turner argues, "is found everywhere, and is normally intensely social. It usually entails the successful deployment of ritual symbols, in narrative structures akin to dramas, stories, and music" (2015: 32). Rituals "excite feelings of collective effervescence" (Bull and Mitchell, 2015: 1). Approaching offsetting conferences in light of their ritual characteristics makes visible the collective enactment (Coleman, 2010b) of the discourses introduced above. Kevin Carrico states:

> *Ritual is arguably a universal feature of human social existence: just as one cannot envision a society without language or exchange, one would be equally hard-pressed to imagine a society without ritual. And while the word "ritual" commonly brings to mind exoticized images of primitive others diligently engaged in mystical activities, one can find rituals, both sacred and secular, throughout "modern" society ... Ritual is in fact an inevitable component of culture, extending from the largest-scale social and political processes to the most intimate aspects of our self-experience (2011).*

These aspects include conferences and meetings (e.g. Coleman, 2010b). Rituals regulate relationships between the individual and the group they are a member of (Ensor, 2015). At the same time, rituals are full of power relations (Bell, 1997). David Kertzer argues that ritual discourages critical thinking and dissent, because it confers legitimacy by naturalising ways of behaving (1988). This legitimacy is associated with persons, moral values, world views and 'ways of doing things' (cf. Moore and Myerhoff, 1977).

Exploring offsetting through spectacle and ritual is helpful, I show in the remainder of the chapter, to understand their role in the creation of unity and consensus (in the face of controversies around offsetting), while naturalising a particular understanding of, and relationship with, nature. They further highlight the role and importance of partnerships, anchored in offsetting, in pacifying dissent, hiding the socially and ecologically destructive violence inherent in industrial development, especially extractivism. Offsetting thus becomes the enactment, or *spectacular performance* of conservation and of sustainability – through

colourful case studies and PowerPoint presentations, through the social relations between people in the room, the *offsetting industry* and an audience that is to be convinced of the 'usefulness' of offsetting. Offsetting spectacle (in conference centres, brochures and conservation narratives) and the ritualistic enactment of unity, I argue, not only mediate corporate-conservation relationships, but help depoliticise and invisibilise corporate harm.

Spectacle and ritual in the places and spaces of offset-making

We are in the middle of London Zoo, next to the tigers' habitat. Weird. This couldn't be much less natural and more depressive, in my opinion. Everyone else seems pretty excited. But it fits quite well, actually: 'nature' behind iron bars, to be dominated, to be controlled, to be managed. Replaceable, commensurable. Separate from humans, both conceptually and materially, thick glass windows, trenches. Demarcations and boundaries everywhere. Signs and regulations. Inside, we discuss the implementation of no net loss policies on the ground (Fieldnotes, 2014NNLc).

All three conferences took place in some of the most prestigious and spectacular places in their respective cities (the Edinburgh International Conference Centre and the Zoological Garden in London) and provide ethnographic data collection sites to understand the discourses that the *offsetting industry* reproduces and draws upon. Upon entering the buildings, one is immediately emerged in the Business and Biodiversity World. In the 2015NCf conference foyer, for instance, an insurance company hands out free reusable coffee mugs to encourage individual 'green' behaviour and appeal to participants' feel-good eco-consciousness (figure 6), next to conservation organisations who are showcasing their publications. Business leaders, CSR professionals, consultants, researchers and conservationists have their first coffee or tea together, new contacts are being made, business cards exchanged. The visual arrangement invites unity and harmony, bringing together people who fight for a common goal. A glowing globe in the foyer, complete with industry icons rather than country names, signals: we are all in this together. One cannot but notice the absence of human or non-human nature on this globe, which represents a resource storage facility more than planet earth (figure 7).

Figure 6 Conference Foyer at the 2015 Natural Capital forum (World Forum on Natural Capital, 2015a)

Figure 7 The globe as resource storage facility (World Forum on Natural Capital, 2015a)

Rituals are characterised by feelings of *communitas* and *comradeship*, Michael Bull and Jon Mitchell argue (2015). The message of a collective 'we' is enacted repeatedly throughout all three conferences, ritualised verbally and non-verbally, not least in Peter Bakker's presentation and corresponding PowerPoint slide on the "collective global challenges" that "we face" (figure 8). The "we" is collective, he continues: "I'm thinking of this as a movement".

Figure 8 Presentation by Peter Bakker (World Forum on Natural Capital, 2015a)

To add to the sense of unity, ever-same blue-white screens with the NCf logo can be found across the conference venue and participants are walking around with hessian bags, decorated with the natural capital logo that they received upon registration. Throughout the conference, the foyer serves as a hub, bringing people together, channelling informal conversations over coffee (and wine), and creating a sense of community and inclusivity, encouraging identification with the natural capital project.

The strife for unity is further visible in the framing and structure of all three events. The way meetings are organised, Kenneth MacDonald shows, is "built on intent" – with particular "objectives, desired outcomes, and seek[ing] to manage these in relation to the expectations of their intended participants and a wider audience" (2010b: 262). The 'bringing together' of different industries and professions to build alliances is the main goal of all three conferences.[19] This is visible in the way sessions are structured: Meetings tend to be organised around "artefacts" (MacDonald, 2010b: 264) both within and outside of conference rooms. In sessions, these can be colourful PowerPoint presentations with pretty nature and exotic animals (often presenting success stories and 'lessons learnt'). Presenters are on stage, sometimes various meters 'above' participants, with special lights and in padded chairs– all lending them additional authority (figure 9). The order of chairs and benches for the 'audience' resembles that of university lecture halls. These arrangements, the required use of an audience-microphone and the actions of the chair help control circulation of information, facilitate the suppression of dissent and encourage "the disciplining practice of self-control" (MacDonald, 2010b: 264).

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[19] The 'No Net Loss Summit', for instance, aims to "bring together 300 experts and professionals from oil and gas, mining, infrastructure, hydro, wind, house-building, utility, forestry and agriculture, manufacturing and retail companies, from governments, financial institutions, NGOs, civil society and research organisations, and intergovernmental institutions" (BBOP, n.d.).

Figure 9 Talk show-like arrangements at the 2015 Natural Capital forum (World Forum on Natural Capital, 2015a)

Plenaries and panels resemble talk shows to enjoy, often moderated by professional journalists, radio/television hosts or sponsors rather than conservation professionals, and often do not allow for questions of the audience to ensure smooth running. The audience's only engagement consists in sitting back and being entertained, encouraged to remain passive. Panels and plenary debates are complemented by occasional innovative corporate-style 'knowledge cafes', 'marketplaces' and workshops, broken up by 'coffee & networking' and 'networking drinks'.

Topics are broken up into 'streams': the 2015 NC forum, for instance, is composed of Streams A-D; Understanding & Managing Risk, Innovation and Tools, Focus on Finance & Investment, and Policy Dialogues. Case studies are not just case studies, but Stories from the cutting edge, or Quick-fire case studies. These streams are not assigned at random, but highly co-ordinated, and prepared by the organisers. Constant referral to previous and upcoming sessions (in the same stream) create coherence, and although participants are encouraged in the opening speeches to mix up and attend different streams, the streams are clearly designed to draw in and 'capture' participants, pre-structuring their conference experience.

Ticket prices in the hundreds of pounds ensure not only high-level corporate participation but the effective exclusion of many (grassroots) NGOs which instead chose to stage protest outside, or organise alternative events (such as the "Nature is not for sale" conference in parallel to the 2013NCf). CEO's Networking Drinks, CEO's Breakfast Roundtable and Young Leaders' Sessions (on invitation only) provide special networking opportunities to (future) corporate leaders. Day one usually ends with the obligatory multi-course conference dinner (figure 10), here in a sky-themed adventure room, as if allowing ourselves to dream.

Figure 10 Conference dinner (World Forum on Natural Capital, 2015a)

Events, sessions and panels are designed to impose unity, to prove the viability and appeal of offsetting, to convince sceptics and to display the power of the existing community of practice that 'already believes in it'. With the exception of a few individuals who raise critical questions, all conferences go very smoothly, without much open conflict. In the BBOP conference, critics from grassroots organisations (such as FERN and FoE International) are given the stage in a debate on day one, before proceeding to discuss the details, policies and experiences with offsets as if that discussion had never taken place. Tellingly entitled "Agree to Disagree", the organisers attempt to construct consensus even in the only session where dissent is conspicuous and consensus impossible.

The social reproduction of governance institutions and ideologies depends heavily on the appearance of success (Mosse in Igoe, Neves and Brockington, 2010). Drawing on Anna Tsing, Caroline Seagle argues that "corporate appeals to capital investment are embedded in an 'economy of appearances'" (2012: 448), involving both dramatic spectacles and exaggeration of profit potential. The latter – the work that has gone into making the business case for biodiversity offsetting – has already been explored above. The former, the spectacular representation of offsetting success is based on the appearance of unity, the celebration of (successful) case studies, appealing storylines and innovative celebratory events. The celebratory launch of the consultation on the draft Natural Capital Protocol or the new Peatland Code, an "innovative mechanism to enable business investment in peatlands, taking into account its many valuable services to mankind" (World Forum on Natural Capital, 2015b), both

at 2015NCf, for instance, signal (corporate) action and success. 'Successful' case studies travel across conferences and contexts, celebrated as evidence of corporate leadership roles and positioning corporations (and partnering conservation organisations) at the forefront of innovation and sustainability.

Case studies come with glossy brochures and fancy PowerPoint slides; branded with corporate and conservation partner logos, recycled over and over again, ritualistically performed in different places to different (yet similar) audiences. They act as mobilisers by inspiring and normalising. Maybe the most famous is Rio Tinto's (highly controversial) flagship project in Madagascar, planned from the beginning to act as pilot for testing strategies of stakeholder dialogue and dialogue in the face of expected resistance (Mulligan, 1999). Others include ArcelorMittal's mining iron ore in the highly biodiverse Nimba Mountains region in Liberia which is offset by the protection of a formerly protected area that is alleged to be threatened by local communities (Ledec and Johnson, 2016: 46). Case studies include 2014 BBOP conference sponsor Ambatovy Joint Venture, led by Sheritt Internationbal Incorporated, a large-scale nickel and cobalt mining and processing operation in Madagascar, meant to achieve a net gain of biodiversity through offsets.[20]

These case studies not only showcase innovative approaches and ecological engineering, restoration and rehabilitation skills – spectacularised with before-and-after shots resembling beauty makeovers. They also communicate that 'offsetting works'. "Success", Jim Igoe and colleagues argue, is "itself an extremely valuable form of 'symbolic capital' … that circulates far beyond the scope of specific interventions" (2010: 496). Weaknesses are framed as technical challenges or design flaws. In the conference context, they further channel debate around the technologies, methodologies and innovative tools employed, creating consensus through acknowledgment of diversity in approaches.

Accounting technologies and 'eco-informatics' (Sullivan, 2010)

> *New technologies are constantly needed. It's not enough to turn nature into 'ecosystem services'. Services need to be bundled and stacked [21], disentangled and picked apart, to make sure not a single service goes unexploited. There is always more (well-paid) work to do for the army of environmental engineers (fieldnotes, 2013NCf).*

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[20] The offsetting project, developed in collaboration with Missouri Botanical Garden, Conservation International, Wildlife Conservation Society, Forest Trends, IRD France, the University of Antananarivo and a number of other NGOs, has become a BBOP Pilot Project in 2006 and includes community forest management zones, community 'education' and a number of programmes to introduce "more efficient rice production", among others (Ledec and Johnson, 2016: 54).

[21] Bundling involves combining different ecosystem services to sell to one buyer; stacking involves selling multiple services provided by the same 'piece of nature' to different buyers (see Robertson et al., 2014).

…and if we do this, and it's gonna happen, accountants will save the world. Sorry, civil society! (Peter Bakker, WBCSD, at the 2013NCf).

Tools and technologies for biodiversity valuation (to establish equivalence between natures and to operationalise NNL) constitute key focal points around which discussions are structured, disagreement channelled and engagement mobilised. But they not only anchor debate, they are also key for the construction and translation of corporate risks that offsetting is positioned against. The Integrated Biodiversity Assessment Tool (IBAT) is one such example of a calculative device to transform biodiversity risks into material risk (Dempsey, 2013). IBAT, created by a number of conservation organisations, provides information on the spatial distribution of 'valuable' biodiversity, therewith creating 'no-go zones', but also 'go zones'; "[a] whole world of lands and waters, species and spaces where one may not have to worry about biodiversity issues" (Dempsey, 2013: 48). NGOs are fundamental in this process of classification and creation of hierarchies between valuable and nonvaluable nature. Jessica Dempsey goes further in her critique: "This is another mapping of useable and un-useable space, similar to colonial mappings that demarcated spaces of 'useable Africa' and 'unuseable Africa'" (2013: 48, drawing on Ferguson). Such instruments facilitate the inclusion of people's concerns into corporate project planning, *before* projects are met with resistance. The tool, an Economist article suggests, "might have saved Transneft, a Russian pipeline firm, the one billion dollars it cost to shift their pipeline route after persistent protests about the sensitive ecosystems around the original route" (Dempsey, 2013: 47). At the same time, 'no-go' areas can become business opportunities themselves – as eco-tourism sites, Payment for Ecosystem schemes or offsetting opportunities.

Technologies are central to the quantification and valuation of the nature that is to be offset and nature that serves to offset, and the construction of 'offset currencies' and 'offset ratios'. The exact numbers, as explored elsewhere, "don't matter" (B1, B7). They are politically negotiated (B1, B4, B5, B7; see also Carver, 2015), amenable to creative modification to balance and negotiate conflict, and subject to financial pressures (cf. Carver and Sullivan, 2017). Nevertheless, an uncountable number of accounting techniques exists, based on a range of indicators from area-based measurements to complex ecological processes. Some of the indicators are straightforward, such as surface area (in hectares), habitat quality (hectares multiplied by indices of habitat quality), or even conservation significance (qualitative assessment of ecological significance). Others are more complex, including species-level information for key species habitat (such as Rio Tinto's Unit of Global Distribution metric for high priority species), or multipliers to address additional layers of uncertainty including indirect

impacts. These are often "based on less precise 'guesstimates' or 'rules of thumb', with or without scientific underpinning" as even the World Bank Group admits in its biodiversity offset "user guide" (Ledec and Johnson, 2016: 23). They are applied against counterfactuals, based on 'background rate of biodiversity loss', to be subtracted from required offsets.

Such technologies help channel and depoliticise debate around the challenges and failures of offsetting, by framing them around notions of inadequate or undeveloped tools and a lack of data on local ecosystem functions and biodiversity (as explored further in chapter 4). In other words, challenges become technical challenges – apparent in panel titles, such as the 2014NNLc Session 7 on "Safeguards and Tools" that asks: "Do companies and investors have the safeguards and tools at their disposal to apply the mitigation hierarchy to projects with rigour?" or Session 12 which investigates "Challenges for Impact Assessment Practitioners". A variety of toolkits, assessments and standards have been developed by the *offsetting industry* to solve these 'technical challenges' (and legitimise the existence of the industry), including the IFC PS6, the BBOP Standard and Methodology Toolkit, the CSBI timeline tool, the Biodiversity Offsets Toolkit, the World Bank Safeguards process, and the IUCN's Biodiversity Risk Assessment and Corporate Decision Support.

These debates around specific concepts further create a common language of engagement. As any proper management technique, biodiversity offsetting comes with a myriad of concepts, principles, mechanisms and processes. Most important here are the mitigation hierarchy and the multiple safeguards that are invoked ritualistically in response to critique, used to draw boundaries and delimit the 'un-offsettable' while creating the 'offsettable'. Both of these will be explored in more detail in chapter four. Others include mobilising metaphors such as additionality, equivalence, like-for-like, avoided loss, mitigation replacement ratios and currencies – or even the foundational concepts of NNL and NPI and the Environmental Impact Assessments within which offsets are embedded. These instruments and technologies are inherently social; they mediate relationships and grant authority and power to the *offsetting industry*. They represent the social function of offsetting itself. Two environmental consultants explain:

> *An ESIA [Environmental and Social Impact Assessment] represents more than the document needed for project permitting or funding. ESIA is a* **process** *which, at its best, serves as the basis for* **building stakeholder relationships, managing risks, avoiding scheduling delays, identifying and solving problems**, *applying sustainable project solutions and* **creating a social license to operate** *(Raine and Melton, 2011, emphasis added).*

Although never explicitly acknowledged in this way, the same holds true for biodiversity offsets. At the same time, these instruments not only help manage risk, but also outsource risk and responsibility to practitioners. The NNL working group, for instance, states that

> A major area of contention is that while the mitigation hierarchy is applied as a theoretical principle, some doubts remain about practical implementation in some cases … Biodiversity offsets have to be seen as a "last resort", only to be applied after all appropriate measures to avoid and minimise adverse impacts have been taken. Determining how far to pursue each step in the hierarchy before moving on is therefore a critical decision process for practitioners (NNL WG, 2013c: 2).

Offset ratios and currencies are used to calculate the required offsetting area or credit units needed to compensate for development projects. They are sometimes pre-defined, depending on the type of conservation action, or subjective determinations by regulatory authorities, taking into account proposed conservation actors and 'risk factors' (McKenney and Kiesecker, 2010). Their assignment is based on a complex and negotiated quantification system – in points, hectares, trees or other units of measurements – justified in scientific terms (or worked out backwards, based on what the developer is willing to pay). When questioned, they tend to be defended with the 'better-than-nothing-argument' and their arbitrary assignment is often acknowledged. As one interviewee recalls about an offsetting project with a leading mining corporation:

> We [needed to] use a multiplier. We were sucking it out of the air – we came up with six times – no, started with eight. They wanted [a multiplier of one]. Eventually we negotiated down right to multiplier 4.8 to one … Most … large NGOs wanted a 10 times multiplier. [Later, the] client hugged me for pushing through 4.8, not 1 to 1 (B7).

One research participant, who works as senior ecologist in a consultancy, recalls discussions inside BBOP about the negotiation of offsetting ratios that illustrate the lack of scientific basis: "At BBOP I was often arguing against academics and their incredibly stringent criteria – would take a few PhDs and 20 years to do" (B1). Scientific knowledge and authority is mobilised strategically, to legitimise certain strategies, but also to call for more metrics, innovation and financial support. "We are in the dark ages of understanding biodiversity", Jonathan Baillie from the ZSL states in the 2014NNLc opening ceremony, "We need national red lists … we need to move to a currency, understanding how businesses can report". The *offsetting industry* depends on such work.

It is through these technologies and vocabularies that authority and authoritative knowledge are constructed, grounded in particular assumptions, worldviews and interests, framing the way forward. Such 'technical means' – every-day technologies and knowledges – are a precondition

for any kind of governance (Tregidga, 2013). The language and practice of accounting helps (re)frame biodiversity loss in technical language, depoliticise it and makes it suitable for particular 'interventions' – positioning corporate offsetting as solution. "Accounting can be used to make processes 'thinkable' and 'governable' … and carries with it both definitional and legitimating potential" (Tregidga, 2013: 813, based on Russell and Thomson). Despite the irrelevance (in many cases) of the actual numbers, green accounting techniques and the innovative tools thus play key *social* roles in the places and spaces of offset-making.

Spectacular nature

Nature 'itself' plays a remarkably small role in these conferences apart from the role as 'service provider' and 'victim' of unsustainable practices, often by indigenous and other local people. 'Images' of nature, however, are omnipresent, mobilised in form of pictures of pristine nature (such as figure 11 on the BBOP conference summary front page), exotic species and fluffy charismatic mega fauna – concealing, once again, the destructiveness that offsetting legitimises.
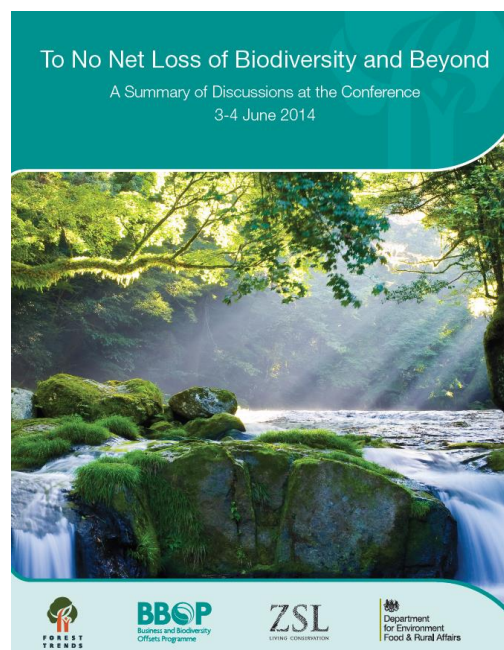
Figure 11 Conference summary (Forest Trends et al., 2014)

What is not quite clear is whether these photos are representations of the nature that is meant to be destroyed (but offset), the nature that is meant to be recreated or restored through offsets, or the nature that is meant to be 'protected'. Neither does that matter, as long as these imaginaries unify conference attendants behind the 'higher goal' of nature protection they are meant to pursue. Such mobilisation is also visible online, as the following example illustrates. In 2016, five bison calves were born at a restored wetland site in the US, which had been

established to replace wetland areas that were destroyed for the expansion of the O'Hare's airfield. The news was spread by *AviationPros*, the industry's leading news source (figure 12), and the public was invited to see the herd (CDA, 2016). A webcam now operates 24 hours to observe bison grazing in one area (US Forest Service, 2016).

Figure 12 Bison herd on offset site, entitled "Bison Calves Born at O'Hare Modernization Off-Site Wetlands Restoration Area" (CDA, 2016)

The places and spaces of offset-making introduced in this chapter matter because they provide forums where offsetting ideology is *performed*, where offsetting becomes legitimised and normalised, and where the *offsetting industry* is reproduced. It is through the framings, the social relations and the spectacular performance analysed above that offsetting becomes a legitimate corporate and policy measure. These spaces are inhabited by actors and ideas, interests, and power relations. Within these spaces, actors use their (social) capital and other resources to pursue their interests; whether these resources are material (money), social (recognition, power, connections, position) or knowledge-based (ecological expertise, accounting knowledge).

The places and spaces of offset-making are also highly ritualised. This ritualisation is verbal, playing out through the mobilisation of concepts and metaphors (such as mitigation hierarchy) to act as safeguards and boundary drawers. It involves high-level speeches with video-messages from conservation celebrities and corporate pioneers, narratives reiterating the gravity and the urgency of biodiversity loss and the need to *work with business* to tackle this problem. Ritualisation is also nonverbal, involving the use of artefacts such as ever-same PowerPoint presentations and case studies, and standardised conference agendas. These agendas are remarkably similar: opening and closing ceremonies, plenary sessions, breakout-sessions, the launch of some new initiative, conference dinners and coffee breaks. So is the behaviour of

participants: listening, taking notes, contributing as expected, small-talking around tables, balancing coffee mugs while engaged in polite conversation, and exchanging business cards. Even innovativeness is ritualised, such as the use of Twitter which has become incorporated into the conference experience, and participants are called upon to use hashtags and engage online. These rituals help institutionalise the belief in the compatibility of economic and environmental concerns, creating harmony and unity. Just as religious belief systems tend to be highly ritualised, these discourses with their ideological undertones and assumptions are reproduced through rituals which legitimise and secure narratives and world views.

Rituals and performance can be understood as representational or as generative (Bull and Mitchell, 2015: 9). In these conferences, I understand them as generative: reproducing a community of practice – the *offsetting industry* – and a corporate-conservation paradigm within which offsetting is embedded. Calling them rituals emphasises the social nature of the performance (Faucher-King, 2005), and their fragility:

> *Since ritual is a good form for conveying a message as if it were unquestionable, it often is used to communicate those very things which are most in doubt ... Ceremony can make it appear that there is no conflict, only harmony, no disorder, only order, that if danger threatens, sage solutions are at hand, that political unity is immediate and real because it is celebrated, and so on. Ritual can assert that what is culturally created and man-made is as undoubtable as physical reality. Whether a ceremony succeeds in its purpose is another question, a question about operational efficacy (Moore and Myerhoff, 1977: 24).*

3.4.   Conclusion – enacting the theatrics of legitimising destruction through spectacle and ritual

In this chapter I analysed offset-making in Europe as a spectacular performance of sustainability by exploring the discourses and ideologies that legitimise and normalise offsetting, their enactment 'on stage' (figure 13) at natural capital and NNL conferences, and the *offsetting industry* that is forming through and around offset-making places and spaces.

Figure 13 Theatrical performance on stage (World Forum on Natural Capital, 2015a)

This was done through the lens of Guy Debord's *spectacle* (1967) and Victor Turner's *ritual* (1969), examining the positioning of corporate offsetting practice as rational and scientific response to solve a global problem, supported by Western rationality often vis-à-vis unsustainable and 'uneducated' local communities. Offsetting, I argued, involves the discursive framing of nature in typologies of business risks – to be incorporated into balance sheets – where nature is, once again, 'othered', to be controlled and managed – based on the long history of capitalism and nature relations of coercion and control. This production of nature as risk relies on the translation work of the *offsetting industry* to make it legible and associate it with resistance and reputation.

The reliance of anti-political managerial governance on ever-more sophisticated measurements and technologies is characterised by Marcuse's (1964) vision of "technology as ideology", based on one-dimensional thinking around ideas of value, nature, humans and science. Already in

1964, he saw that the "universal quantifiability is a prerequisite for the domination of nature" (Marcuse, 1964: 168) and enables the myth of scientific objectivity and rationality. To keep up this myth requires a particular view of human and nonhuman nature, of nature as (eco)system and of nature as risk – exactly the kind of knowledge systems that offsetting is embedded in.

Having introduced the discourses, the *offsetting industry,* and some of the places and spaces of offset-making in Europe, I now move across the channel to examine the legislative process behind the (attempted) institutionalisation and normalisation of offsetting in EU policy making – where we will encounter, again, many of the same individuals and groups introduced in this chapter.

4. Introducing No Net Loss: an attempt to anchor offsetting in the European political economy

The EC's No Net Loss initiative (NNLi) does not mark the introduction of biodiversity offsetting into the European political economy. Neither does it mark the introduction into its legal framework. European firms have engaged in, and pioneered, voluntary project offsetting in- and outside Europe for years; European banks have been pushing for project offsetting in the European periphery and beyond; EU member states have had offsetting or compensation legislation in place for decades (Germany), others have started to develop it more recently (Spain) or initiated pilot projects to test offsetting in the planning process (UK). Offsetting is already part of the European conservation legislation; it is required under the Habitats Directive for 'significant adverse effects' under certain (restrictive) conditions to maintain the overall coherence of the Natura2000 network (EC, 2007/2012) and forms part of the Environmental Liability and Impact directives. Nevertheless, a mandatory instrument based on the EC's NNLi would mark a turning point for offsetting inside the EU, making it a fundamental principle of European conservation, land use planning, application procedures and corporate behaviour. At the time of writing, the future of the NNLi is unclear; it appears to have 'stalled', or even 'died', according to some observers, while others are convinced that it will re-surface closer to 2020, when the EC is forced to admit its failure to achieve its biodiversity action target of No Net Loss (NNL). Either way, the initiative played an important role in the normalisation and legitimation of offsetting in Europe and beyond, adding the political weight of the EC to a political instrument which is being adopted by corporate and state actors across the world.

In this chapter, I explore the recent history of, and dynamics within, the NNL working group and the interests of, and the relationships between, the different actors involved in the group. The aim is to unravel the (social) mechanisms of corporate power that enabled its institutional ascendance in the EU. The NNLi represents, I argue, an attempt 1) to manage, flexibilise and weaken existing nature legislation in the EU; 2) to secure access to land and capital by (European) firms; and 3) to manage and diffuse dissent and resistance, facilitating the management and flexibilisation of the very concept of limits to ecological destruction and accumulation. It reflects corporate frustration with current EU nature protection legislation, which is, despite all its shortcomings, lack of funding and bad implementation, quite effective. It further plays into the promise of the newly emerging restoration economy, and is facilitated by a political climate within the EC that is, today more than ever, concerned with the overriding principle of external competitiveness to facilitate accumulation and growth.

While offsetting tends to be conceptualised as an ever-new frontier in the drive to commodify, marketise and financialise nature (chapter two), not enough attention is being paid to how it is used as a strategy to push for flexibilisation of legislation, while expanding corporate and state control over human and nonhuman nature. Offsetting, whether as part of a mandatory legislative framework or as corporate risk management strategy, relies on particular ways of dealing with nature and humans, certain assumptions and understandings of the human-nature relationship, problem constructions and transformations of local people into enemies of nature.

Flexibilisation involves the weakening and bypassing of existing nature legislation, and *securitisation* – the constitution of nature as business risk – allows for the construction of natural capital as "life insurance" (EC, 2011a). The focus on flexibilisation allows me to draw attention to the historical conjuncture at which biodiversity offsetting is being positioned (discursively) as a solution to biodiversity loss, just when recognition of the failure of the 'green economy' to address the multiple social and ecological crises we are witnessing is growing among people around the world. It thus allows me to show how biodiversity offsetting – and, in this case, *negotiations* around biodiversity offsetting – function as a technology of governance. At the same time, this focus allows for an exploration of the underlying assumptions and beliefs of biodiversity offsetting; of the restorability, commensurability and manageability of nature: the 'net' in NNL policies. These assumptions, embedded in a particular kind of Western science and conceptualisation of nature, rely on a range of new valuation techniques, measurements, and concepts – from 'mitigation hierarchy' to 'additionality' – and make nature subject to performance standards, monitoring and assessments, while being framed as business risk and opportunity for growth (chapter three). This further legitimises the de-politicising managerialism and top-down global governance in which offsetting can serve as rationalising technique for enabling accumulation and social control.

This chapter begins by introducing the NNLi, the working group and its members, their interests and roles, as well as the political economic and legal context in which it was established. The remainder of the chapter will be structured according to the three parts of my argument outlined above. In the first section, *Flexibilising and managing stringent EU nature legislation*, I explore how the initiative relates to the attempt to weaken existing European conservation legislation. I briefly sketch out some of the history of industrial relations upon which the EU was founded, and the role of industrial interests in European integration, particularly the European Roundtable of Industrialists (ERT) and their influence in shaping policies for the purpose of external competitiveness that became the EC's main goal. I then contextualise the NNLi in the political economy of REFIT, the Commission's management tool to increase competitiveness by

'cutting red tape', that was used explicitly in an attempt to weaken and 'modernise' nature legislation by streamlining and subordinating it to the imperative of growth. Despite the discursive focus of neoliberalism on deregulation, this goes to the core of the kind of managerialism, manifest in 'new public management' for the sake of competitiveness – turning risk into profit – which characterises neoliberal governance (outlined in chapter two).

In the second section, *Securing access to land and capital*, I situate the NNLi in the global political economy of biodiversity offsetting and examine its role in legitimising large-scale (infrastructure and mining) projects and making these industries 'sustainable'. Large-scale infrastructure projects – whether roads, trains or electricity projects – have always played a special role in EU integration and EU-(state)-building (Balanyá et al., 2000), and the 'greening' of these infrastructures, which are increasingly facing resistance on social and environmental grounds, hinges on notions of offsetting and 'neutrality'. Access to land, I argue, increasingly depends on biodiversity offsetting both for capital acquisition and legal institutional access.

In the third section, *Dealing with dissent*, I focus on the role of the NNLi working group and corporate-conservation partnerships around offsetting in dealing with resistance and generating a licence to operate. This involves divide-and-conquer tactics and depoliticisation as a political strategy, and exploring the way working group negotiations operated and 'stumbled forward', through very political yet fundamentally depoliticised debates on safeguards, limits and concepts – mobilising metaphors – that contributed to its shadow-existence. The focus on methodological issues and corporate case studies allowed the debate on offsetting to move forward, with concepts such as the mitigation hierarchy acting like vehicles around which new networks of consultants and ecologists have formed and new industries have emerged (as explored in chapter three). Despite its problems, lack of enthusiasm and weakening of ambitions and outcome, the working group has been important in institutionalising offsets and advancing this debate. *Lastly*, I explore the potential of the initiative to facilitate the flexibilisation of limits to development, and its role in the growing restoration economy in the conclusion.

4.1.   Introducing the No Net Loss initiative...

The NNLi is embedded in a long history of conservation policy in the EU. The two cornerstones of the European conservation policy are the Birds Directive (Council Directive 2009/147/EC on the conservation of wild birds), initally adopted in 1979 and replaced in 2009, and the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna

and flora), adopted in 1992. A number of other policy instruments and pieces of legislation affect biodiversity (loss), either directly or indirectly (such as the Environment Liability Directive). Under the Birds and Habitat Directives, EU member states are required to designate and manage conservation areas to protect around 2000 threatened species and habitat types that are perceived to be "of European importance" (EC, 2011b). These Special Protection Areas and Special Areas of Conservation together make up the Natura2000 network. Natura2000 sites are co-funded by member states and the EC through a number of different budgets (including the LIFE programme, which will be discussed later). The network is severely under-funded. It was estimated that funding amounted to €550-1,159 million/year in 2011, representing 9-19% of the estimated financing needs of €5.8 billion/year during the budget period of 2007-2013 (Kettunen et al., 2011: 5). Compensation for damage of Natura2000 sites is a legal requirement under the Birds and Habitats Directives and the Environmental Liability Directive. Like-for-like compensation for residual impacts of developments is legally required under Article 6(4) of the Habitats Directive.

The creation of a European *habitat banking system*, based on the trade of biodiversity credits, has been explored and advocated by the EC since 2007, when it issued a green paper on market-based instruments for environmental protection for consultation (EC, 2007), supported by some industrial lobbies (mining, construction) and opposed by others (agriculture). Following the failure of its 2010 No Loss of Biodiversity objective, adopted in 2001 by EU Heads of State and Government and in 2006 by the EC (EC, 2006), the concept of "No Net Loss" was first introduced in a legal document in the EU Biodiversity Strategy for 2020. The strategy was tabled by the EC in May 2011, and adopted by the European Parliament under the title "Our life insurance, our natural capital: an EU biodiversity strategy to 2020" (EC, 2011a). Action 7 of the strategy outlines the need to "[e]nsure no net loss of biodiversity and ecosystem services", and pledges that, in collaboration with the member states, the EC will "develop a methodology for assessing the impact of EU-funded projects, plans and programmes on biodiversity by 2014" and work towards "proposing by 2015 an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes)" (EC, 2011a: 12).[22] The NNL principle occasionally 'bubbles up' elsewhere in the European policy landscape: the Roadmap Resource Efficiency Europe, for instance, reiterates the NNL principle "to foster investments in natural capital and to seize the full growth and innovation potential of the

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[22] The Environment Council of Ministers further stressed "the importance of further work to operationalise the 'no net loss' objective of the Strategy for areas and species not covered by existing EU nature legislation" (Council of the European Union, 2011).

'restoration economy'" (EC, 2011c: 12), and promotes the use of innovative financial instruments more generally.

A working group on No Net Loss of Ecosystems and their Services was established under the Common Implementation Framework to further develop this policy and work out recommendations. In preparation for the NNLi, the EC commissioned four studies on habitat banking on the EU; "Policy Options for an EU No Net Loss Initiative" (IEEP, 2014b); "Exploring potential demand for and supply of habitat banking in the EU and appropriate design elements for a habitat banking scheme" (ICH GHK, 2013), "Biodiversity metrics and mechanisms for securing long term conservation benefits" (ICF and IEEP, 2014) and "Supporting the elaboration of the Impact Assessment for a future EU Initiative on No Net Loss of Biodiversity and Ecosystem Services" (IEEP et al., 2016).

Of particular interest is the "technical report" commissioned by the DG Environment on "The Use of Market-Based Instruments for Biodiversity Protection – The Case of Habitat Banking"; meant to investigate the potential of offsetting for EU nature conservation and led by London-based environmental economics consultancy eftec (Dickie and Tucker, 2010). The consultancy has been at the forefront of NC accounting and habitat banking, designing policies and investment strategies that involve offsets in collaboration with public and private sectors (such as British Gas Plc and Unilever), and was instrumental in the setup of offsetting pilots in the UK. Ian Dickie, director at eftec, was himself active member of the working group before he was commissioned by the EC to lead the work on the report. A trained economist, he previously worked as head of economics for the Royal Society for the Protection of Birds, Europe's largest conservation charity, to advocate recognition of the value of the environment in decision-making. The report was co-authored by Graham Tucker from the Institute for European Environmental Policy (IEEP), an equally offset-enthusiast green think tank, in collaboration with, among others, Kerry ten Kate, environmental consultant Jo Treweek, Jon Ekstrom from The Biodiversity Consultancy and Joshua Bishop from the IUCN. Given their CVs and affiliations with institutions that benefit financially from offsets (and the footnote on page i that eftec itself "offsets its carbon emissions through a biodiversity-friendly voluntary offset") it might come as no surprise that the report enthusiastically endorses offsetting and even suggests a *transnational* habitat banking scheme (Dickie and Tucker, 2010: 249). Recommendations include the altering of existing environmental directives such as the Habitats Directive and Environmental Liability Directive to improve the feasibility of a habitat banking scheme (Dickie and Tucker, 2010: 127) – a contentious proposal that was never publicly supported by EC

officials. However, as I argue below, it only fitted too well with its agenda to open up and weaken existing nature legislation.

...and the working group

The NNL working group that was set up to work out details of the proposed new initiative was composed of selected members from different sectors: member states' (environmental) ministries[23], 'experts' from environmental consultancies and similar bodies, individuals from BBOP/Forest Trends, representatives from industry associations, nongovernmental organisations representing civil society and landowners, EC officials, and a number of individuals (introduced below). The group held six formal meetings between February 2012 and July 2013, as well as a joint workshop with BBOP and a habitat banking workshop[24]. Meetings were usually attended by 15-20 individuals, many of them core to the *offsetting industry* explored in chapter three. They revolved around a number of recurring agenda points: the discussions of four documents that were produced collectively; the mandate of the working group, scope and objectives of the NNLi (NNL WG, 2013a), operational principles (NNL WG, 2013b) and glossary of terms (NNL WG, 2013c); complemented by case studies, experiences and lessons learnt; and the presentation of the four studies commissioned by the EC that have been introduced above. Following the last meeting of the group, and final changes to all documents, it became quiet around the NNLi (for reasons that will be explored below).

The most important function of the working group, I argue below, has been to create *stakeholder dialogue*, to bring conservationists, industry representatives and policy makers together. The working group was composed of different representatives from different sectors. Member states mainly sent representatives from ministries or environmental protection agencies, many of whom had no or very little previous knowledge of offsetting. All but one of the 'experts' were employed by environmental consultancies or similar professional associations with a (financial) interest in offsetting, either because they work with or for corporations who offset, or because of paid policy consultancy work (The Biodiversity Consultancy, Environment Bank LTD, BIOTOPE, BBOP/Forest Trends, eftec, Institution of Civil Engineers, European Chapter Society for Ecological Restoration, Bio3).[25] Of the seven NGOs that participated, three were land owner/hunting associations (Confederation of European Forest Owners, European Landowners Organization, Federation of Associations for Hunting and

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[23] and comparable institutions

[24] Meeting dates: 17/02/12, 04/07/2012, 07/11/2012, 04/02/2013, 23/05/2013, 04/07/2014; workshop dates: 22/05/2013, 03/07/13.

[25] A handful of additional individuals from the Committee of the Regions, the UK Wildlife Trusts and the EIB attended occasionally.

Conservation of the EU), one was IUCN, known for its pro-offsetting stance, and three were civil society organisations (CEEweb for Biodiversity, BirdLife Europe and FoE Europe). The latter represents the only grassroots organisation. BirdLife International – despite taking a critical stance towards the NNLi – has been criticised for collaborating with Rio Tinto on its NPI policy that includes the controversial offsetting project in Madagascar. More critical NGOs and individuals who engaged with the NNLi (such as FERN or Corporate Europe Observatory) were not invited to join the group; a number of applications to join were rejected.

The composition of the working group illustrates a more recent shift within the EC on who counts as 'civil society'. Whereas corporate representatives have always held a privileged place within EU policy making, particular commercial interests (such as landowners, farmers and foresters) are increasingly being recognised as civil society representatives, I am told by one conservationist (C5). They receive co-grants from the DG Environment and are increasingly considered 'stakeholders'. The EC, the interviewee explains, "has been systematically blurring the lines" of "who is civil society" (C5). Industry representatives were from CEFIC (European Chemical Industry Council), Euromines (European Association of Mining Industries, Metal Ores and Industrial Minerals), EURELECTRIC (the Union of the Electricity Industry), ESPO (European Seaports Organisation), Copa-Cogeca (European farmers) and Cembureau (manufacturing industry).

The industry representation illustrates which industries are the most interested in offsetting. Indeed, I was told by working group members, it was these industry associations who pushed for a *legally binding* approach to offsetting – particularly those in the mining business (C1, C3, A2). The legally binding approach would provide legal certainty, I was told by a senior BBOP member; "Business is very rational ... They're willing to pay for clarity. They can manage risks. They rather pay a bit more up front and be able to speed up getting permits and avoid big legal actions" (C2). Much of this interest is based on fears of losing competitiveness vis-à-vis smaller companies, one environmental consultant explains. Euromines in particular, I am told by another working group member, "has really been driving the offset agenda... [They are a] very important lobby – very powerful" (C4). Yet, industry representatives are far from forming a "unified front", because position vis-à-vis offsetting very much depends "on [the] precise nature of business operations" (C2). The role of corporate interests will be elaborated in more detail below.

The single strongest driving force, I am told by various working group members, has been the army of *environmental engineers* (consultants, ecologists and environmental economists)

introduced in chapter three, in concert with IUCN, who are lobbying for the application of NNL to all drivers of biodiversity loss in Europe (B3, C1, C5). Financed mainly by corporate clients, many consultants are convinced that their work is a "way of working with wildlife", as one consultant tells me; "want[ing] to make an impact" (B5). "[It's been] consultants who have been very aggressively driving the offsetting agenda", one of them explains, most notably Kerry ten Kate, arguably the single most important individual in the world of biodiversity offsets. An NGO representative describes:

> *Kerry [has been] one of the most vocal drivers of the thing. A couple of meetings ended up as duals between me and her … [Consultants were there] not just to provide information, [but] trying to sell the product. In her case the product was really BBOP, with [the] offset agenda behind it … [Their message was:] You can do offsets properly and BBOP is the proper way of doing them. The EC just needs to write BBOP into legislation. (C5)*

This confirms the important role of *offsetting industry* explored in chapter three, led by BBOP and IUCN – "the strongest sponsors" of offsetting in NNL negotiations, according to one environmental consultant (B6). They were supported by officials from the UK Department for Environment, Food and Rural Affairs (DEFRA) and the private Environment Bank – both involved in setting up pilot projects to modify the British planning system and facilitate housing development, and represented on BBOP's advisory board. The Environment Bank lobbied for a mandatory instrument in form of a framework directive for the sake of facilitating development. In an email to EC officials (obtained through FoI request), Guy Duke from the Environment Bank writes:

> *Third party offsetting enables offsetting to 'go to scale' by delivering greater supply more rapidly, thereby facilitating (rather than blocking) development, enhancing competition among offset providers and reducing unit costs for developers … [T]here is no impact on the developer's bottom line … [Offsetting] offers considerable **financial gains to developers**, notably increased certainty and speed through the planning system, decreased risk, and transfer of long-term liabilities, but also in many cases other benefits including **gain in net developable area**, and **reputational enhancement**. Thus, offsetting does not put a brake on development; rather, the evidence from the US suggests it brings forward c. $100 bn per year of development by an average of 5 months (email to Director General of the environment Karl Falkenberg and director of Natural Capital Pia Bucella, 05/05/2014, emphasis added).*

Especially remarkable is the promise of conversion of non-development land into development land – which supports concerns around the permission of development which would have not been allowed to go ahead without offsets, and continues to be denied in public.

Similar levels of enthusiasm were shown by government representatives from the Netherlands and France, with some mixed support from German members. The Netherlands in particular has

promoted a landscape approach to conservation and been criticised for an increasingly flexible interpretation of the Habitats Directive, allowing for offsets to compensate for damage to protected areas (Verschuuren, 2010). The offset-enthusiasm of the Dutch government has been documented elsewhere: it was at the request of the Dutch government that BBOP submitted the idea of biodiversity offsets to the Conference of the Parties to the CBD in 2008 (Penca, 2015: 99). Most member state representatives in the working group, however, had no strong position on the issue given their lack of pre-knowledge, I am told.

EC support was mixed. The biggest supporters of the NNLi were Francois Wakenhut, then-head of the Biodiversity Unit in the DG Environment and member of the TEEB Coordination Group, as well as officials from the DG Growth, a much more powerful part of the EC architecture. A high-level EC official criticises that the NNL was imposed "from above" (A4); it encountered some resistance from members of DG environment, many of whom are sceptical of offsets:

> *Offsetting has been parachuted into the biodiversity strategy and council conclusions, pushed for by the Commission and certain member states, until it took on a life of its own in the hands of Francois Wakenhut … He wanted something to his name, something in the 'spirit of new things'; overcoming 'yesterday's conservation', entering the Brave New World of ecosystem services, natural capital accounting and offsets (A4).*

The *offsetting industry* is closely connected to – and networked with – not only key EC officials, but especially with domestic policy developments in the UK. The close relationship between consultants and British government officials is only one of the reasons for their influence. Another conservationist tells me:

> *Well, Brussels speaks English. [There has been an] army of British academics, consultants, NGOs, government bodies [promoting offsetting] … and everyone gets dragged into it. The English were getting excited about it, and when the English are getting excited about it, it becomes European and global (C5).*

Yet, not everyone was as enthusiastic as 'the English'.

'Nature is not for Sale' – civil society resistance against offsetting

At first unnoticed, the EU NNL policy process quickly generated media discussion and civil society engagement. Whereas many large conservation and environmental NGOs embraced offsetting, a small number of grassroots, social and environmental justice groups and academics challenged the policy process and mobilised around it. They organised a number of public events to raise awareness, launched videos (Fern, 2014; Counter Balance, 2013) and published media articles, reports and offsetting case studies (e.g. FoE and Fern, 2014) to generate debate. Under the motto "Nature is not for Sale" (Nature Not for Sale, n.d.), an alternative discourse has

been put forward, in which offsetting, as the newest form of commodification and financialisation of nature, was harshly criticised. Activists staged a protest in front of the International Conference Centre during the First International Forum on Natural Capital in Edinburgh in 2013 and organised a counter forum where academics and activists debated the dangers involved in "making nature pay for its protection", as one panellist described it, and strategised how to mobilise and form alliances to fight these developments. A number of meetings took place in Brussels, where strategies were formulated to resist the NNLi. One working group participant recounts: "[There was a] big fight! Which wasn't envisaged or wanted. The Commission was dragged into it against its own will. While the mainstream NGOs were 'gearing up for the fitness check'" [explained below] (C5). This "opposition to offsets", I am told by an EC official, "has dampened enthusiasm … Offsetting has become a toxic word" (A2). In response, the language within which offsetting was embedded had to be changed, and NNL discussions recast in the language of 'neutrality' and 'net positivity' – with increasing focus on the mitigation hierarchy. Similarly, in the transnational offsetting world, the language of offsetting lost much of its appeal following public criticism, especially in the English-speaking news media; sometimes replaced by NPI, net gain and natural capital.

The correlation between the public delegitimisation of offsetting in the UK and Brussels is probably not a coincidence. "Those George Monbiot articles", an EC official tells me, "of course they were sent around the Commission too…" (A2). "NNL isn't trendy anymore – natural capital is", I am told by another research participant from an environmental consultancy; "[o]ffsets have proven really challenging – even big companies have been experiencing that" (B6). "They [corporations and consultants] speak in different terms now", another respondent explains (B2). This new language, however, is based on the very same assumptions and mechanisms, just as the mitigation hierarchy itself is reliant on offsetting as 'last resort'. But why was it pushed so ambitiously in the first place? In the next section, I go on to explore some of the drivers and motivations of the initiative.

4.2.   Flexibilising and managing stringent EU nature legislation

The adoption of the 2020 biodiversity strategy that introduced NNL into EU conservation policy, following the failure of the previous No Loss of Biodiversity objective, needs to be contextualised in the recent attempt of the EC to 'open up', flexibilise and weaken existing European nature conservation legislation. Although biodiversity continues being lost in the EU at an alarming rate, the two EU conservation directives that form the pillars of EU conservation policy – the Habitats and Birds Directives – are considered to be quite effective and have

provided measurable conservation benefits (Donald et al., 2007; Gruber et al., 2012; interviews). The strict wording of the directives, and the fact that

> *economic considerations can play no vital role in the establishment of the Natura2000 Network impl[y] that, in some instances, economically valuable tracts of lands, such as port areas and other industrial estates, also have to be designated as a Natura2000 site, at least when they qualify as most suitable sites according to the Habitats and Birds Directives (Schoukens and Cliquet, 2014: 198).*

Under the 'landscape approach', member states – particularly the Netherlands and Belgium – have increasingly incorporated offsets into development projects and interpreted the Habitats Directive in progressively more flexible ways.

In the last decade, however, EU judges have ruled more strictly on the Habitats Directive, and attitudes towards more rigorous enforcement have shifted on the national level (Schoukens and Bastmeijer, 2015; Schoukens and Cliquet, 2016). Following initial reluctance by national courts "to scrutinize planning decisions in the light of the procedural and substantive requirements set forth by the EU nature directives, recent case law developments showcase a greater willingness to apply a rigid standard of review in this respect" (Schoukens and Cliquet, 2016: 12, citing Zijlmans and Woldendorp). Judges have increasingly shown willingness to stop development projects on the basis of inadequate assessments or incorrect application of species protection rules (Verschuuren, 2010; Schoukens and Cliquet, 2016). The increasing conflict between development projects, particularly major infrastructure and renewable energy projects (interviewee), and conservation of Natura2000 sites and species protection led to the view of the directives as burdensome "obstacles to development", two interviewees from an conservation organisation and the EC explain (see also Schoukens and Cliquet, 2016). This increasing scrutiny has led developers to resort to offsets to compensate for damage to Natura2000 sites (Verschuuren, 2010; Schoukens and Cliquet, 2016). However, the European Court of Justice made the use of offsets for private developments increasingly difficult by upholding the need for "imperative reasons of overriding public interest", as specified in Article 6(4) in the Habitats Directive (in Schoukens and Cliquet, 2016: 12). The directives thus became increasingly unpopular with many political and business leaders, a conservationist explains (see also Schoukens and Cliquet, 2016).

It may thus not come as a surprise that despite – or because of – widespread acknowledgement of the conservation success of the two directives in the face of lack of funding and miserable implementation (see also Potočnik, 2012), they were included in the EC's Regulatory Fitness and Performance (REFIT) – Fit for growth programme (EC, 2013a) in 2013. A year later, President

Jean-Claude Juncker explicitly mandated Environment Commissioner Karmenu Vella to evaluate and assess the potential for 'merging' and 'modernising' the two directives (Juncker, 2014). Under REFIT, the Commission evaluates whether EU regulation is "stifling businesses"; with the aim to "streamline legislation and reduce regulatory burdens", "simplify or withdraw EU laws, ease the burden on businesses and facilitate implementation" (EC, 2013a, emphasis added) – with the overriding objective of external competitiveness. As then-president José Manuel Barroso was quick to add, however, REFIT would "not put into question the important benefits for citizens and business of EU regulation, particularly the rules underpinning the Single Market" (Juncker, 2014). The outcomes of REFIT include the "simplification" and "burden reduction" in the areas of animal health, consumer product safety and clinical trials for pharmaceuticals (EC, 2013a). These actions are being justified under the "smart regulation" paradigm (EC, 2010b), based on cost-efficiency and facilitation of the overriding objective of economic growth – and allegedly in response to citizens' concerns that the EU "generates too much red tape" (EC, 2013a). The driving force behind REFIT was the "High Level Group of Administrative Burdens in the EU", set up in 2007 with support of the European Council, led by British Prime Minister David Cameron and chaired by the German right-wing politician Edmund Stoiber (EC, 2013b), "Mr. Red Tape" (Sarmadi, 2014). The group is composed mainly of high-ranking business representatives and some government advisors or members. It is pushing a clear deregulatory agenda and the four members representing public health, workers, consumers and environment strongly dissented to the final report of the group, including its recommendations for REFIT, framed as a "competitiveness test" (Kosinska et al., 2014). Recommendations include the withdrawal of legislative proposals on soil protection, access to environmental justice and shale gas regulation, among others (Kosinska et al., 2014).

The inclusion of the European nature legislation, supposed to "ensure the best possible cost/benefit ratio for EU regulation" (EC, 2014), constitutes a poorly disguised attempt to further weaken and flexibilise the two directives. Given that "[t]he Commission has [already] undertaken economic evaluations of the benefits of the ecosystem services of Natura 2000"; and that such evaluations are now being applied in some member states (EC, 2014: 13), a REFIT evaluation would have "inevitably" weakened the directives – likely to allow for offsetting inside the areas currently protected under Natura2000 legislation, an interviewee from a conservation organisation explains. Currently, the NNLi is being designed only to cover unprotected areas, although this has been contested by some working group members (NNL WG, 2013a). The announcement of the evaluation of the EU nature legislation was met with outrage by the conservation community; over 120 European NGOs mobilised against the "opening up" of the

two directives, and received overwhelming support by citizens and a number of member state governments (e.g. Joint Links, 2014). Within weeks, over 500,000 individuals participated in the public consultation and appealed to EU decision makers to "save our nature laws and make sure they work properly" (Nature alert!, 2015). Following public pressure, first the European Parliament and then the Commission pulled back, publicly announcing that the directives were 'fit for purpose'. The REFIT negotiations not only triggered overwhelming public response – unexpected by the EC – but also put on hold all other initiatives in the DG environment. "Because of REFIT – everything is frozen", I am told by an EC official. Rather than being incorporated into the re-working and 'modernising' of the directives, the recommendations that came out of the NNLi working group will now form part of the action plan to 'improve implementation' of the directives.

According to working group interviewees, the NNL initiative was originally intended to cover Nature 2000 sites, for instance by replacing the conservation directives with a new Biodiversity Framework Directive; it started "much more ambitious" (civil society interviewee). Especially industry representatives promoted this flexibilisation for "more efficient compliance with existing legislation" (industry response on 15/03/2012: 1). Soon, however (and confirmed by the massive civil society campaign against REFIT), it became clear to the EC that "you can't touch the two directives", a conservationist explains. Natura2000 sites became off-limit even before the working group was set up. As one interviewee describes: "It started sinking. Then the tsunami arrived. The new Commission [demanded]: focus on REFIT, no new legislation!" A member of a large conservation organisation tells me:

> Very early on, in 2012, it became clear [to us] that the NNLi was about writing a new directive… We were against it – [we knew it] would undermine existing directives … We knew that this won't be pretty in the current political climate. So we started sabotaging it from day one, entered alliance[s] with more radical NGOs (C5).

Much of the resistance was not in opposition to the idea of offsets *as such*, but against what they *represented*; a new era of regulation in favour of business interests, a fundamental restructuring of European nature legislation to accommodate industrial development, and a way to "get rid of" the Birds and Habitats Directives (C3). One working group member from a conservation organisation is worth quoting at length:

> The directives are hated so much because they actually save biodiversity. Others – less so. The EIA [Environmental Impact Assessment] directive [was] reformed 3 years ago – no one questioned it, it has never been under fire. In fact, it has even marginally been improved … [it is] not threatening to developers, [it is] just process-based … [You] just need to report and quantify things and then you can build your motorway… Lots of people got exceptions (agriculture, fishers … villa builders …) [it only applies to]

motorways and other big projects. But the directive created a whole industry of tame consultants that produce bullshit [to push these projects through]. It's been great for growth and jobs. But not [for] saving nature … The Habitats and Birds Directives are fundamentally different because they have outcome *obligations (favourable conservation status) – that hurts. Despite all of their issues… Ultimately, [with these two directives, you] can actually squeeze people. The Court of Justice and EC have been doing good [work] of strengthening it [by developing] all kinds of definitions… e.g. any activity with significant damage is captured … a fight what is 'significant' … was won. You actually need to look at alternatives … mitigation is not compensation … needs to be done before! Overriding public interest … is 'relatively upheld' … It's been starting to bite … to make a difference. Today, trashing nature in Europe is more difficult than 20 years ago (C5).*

The relative success of the two directives generated a backlash, particularly by farmers, foresters, developers and the mining and cement industries. A high-level EC official confirms my initial thoughts. "They want to flexibilise", the interviewee explains, "the DG feels threatened" (A4). They hint at a "power struggle inside the Commission" (A4). The biodiversity unit has been losing power within the EC, and is increasingly forced to look for "innovative solutions that don't put a burden on industry", while substantive finances have been poured into research budgets, "to keep up the high profile in the EC … to be seen as doing stuff" (A4).

The next section contextualises this political climate and the power shift in the EC, putting them in dialogue with the historic alignment of EU policy objectives with (extractive and infrastructure) industry interests and illustrating their importance to understand the NNLi.

Conservation, extractivism and infrastructure in the EU

Historically, European nature conservation legislation has formed a significant pillar of EU legislation, and the transnational nature of many environmental problems has played an important role in the public legitimisation of the post-war economic boom European project and European integration. Increasingly, however, all new legislative initiatives are being dictated by the mantra of external competitiveness. Just as old policies are tested for 'hindering competitiveness' under REFIT, new policies need to comply with the same imperative – more openly and explicitly than ever before, I am told by a research participant from the EC (A2). The DG's focus has shifted from "strong laws enabling suing corporations that violated the Habitats [directive] towards weaker, price-based instruments", the interviewee continues (A2). The shift under EC president José Manuel Barroso has often been assigned to the growing influence of economically more liberal countries (Parker, 2005), confirmed by his consequent appointment at Goldman Sachs. Yet, this is not a personal game, but marks a systemic paradigm shift – becoming ever more apparent. "The new Commission [under president Juncker]", I am told by one working group participant, "had three aims: kill the Habitats Directive, kill the air package

proposal and kill the circular economy proposal. In other words: kill all new environmental proposals, and attack the single best pieces we have already" (C3).

EU policy making and integration have always been shaped by corporate – and particularly extractive/energy and infrastructure/construction – interests; the very origins of what is now the EU lie in coal and steel. "Historically", Tamás Hámor argues, "the mining industry has received privileged treatment within the European Community" (2004: 252). This corporate influence is present across stages of the policy making process; before and during proposals, and even at the implementation stage (Grant, Matthews and Newell, 2000). European integration began with the Schuman Plan in 1950, when the European Coal and Steel Community was launched in response to fears of the use of Germany's coal and steel industry to build another war machine, and to take a first step toward deeper European integration (Alter and Steinberg, 2007). Infrastructure and extractive interests continued to shape European integration. Bastiaan van Appeldoorn traces this influence in his work on the ERT, an alliance of the corporate executive of Europe's leading corporations, representing the "interests and power of the most transnationalised segment of European capital" (2010: 157). The ERT was fundamental in shaping European governance and European unification through its privileged access to the European institutions. Two former EU commissioners (Etienne Davignon and Francois-Xavier Ortoli) were involved in the formation of the ERT and became members shortly after their retirement (Rutherford, 2011)[26].

After having accomplished the setup of the single market (and with it the re-launch of European integration the Commission desired), the ERT "turned then to its next priority: the development of 'Europe's infrastructure … A single interacting system or mega-network with a single output: mobility" (van Apeldoorn, in Balanyá et al., 2000: 22). To support the unrestricted flow of goods, and therewith economic growth, the ERT (with the EC) argued

> *for the adoption of the environmentally controversial Trans-European Networks (TENs). TENs is the largest transport infrastructure plan in history. It includes a number of built and unbuilt monsters: the Channel Tunnel, the Øresund Bridge connecting Denmark and Sweden, a series of high-speed train links, numerous airport expansions and 12,000 kilometres of new motorways (Balanyá et al., 2000: 22-23).*

The ERT was the key force behind the Channel Tunnel between England and France (together with Alistair Frame of Rio Tinto!), the development of the European high-speed rail system and a European-wide road building project (Moody, 2001). By intensively lobbying national transport ministers, the ERT contributed to bringing TENs onto the EU agenda, including them

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[26] Another noteworthy member has been Rio Tinto's former director Andrew Buxton.

into the Maastricht Treaty in 1991, and finally securing additional funding for their implementation –justified with the need for international competitiveness. "With a total estimated budget of 400 billion Euros, the Trans-European Networks (TENs) are the largest transport infrastructure programme in the history of the world" (Balanyá et al., 2000: 68).

With the development of the internal market – promoted by the ERT – the relationship between corporations and EU institutions, and particularly the EC, changed in the late 1980s and early 1990s. This was the time when the lobbying industry, already established in US politics, took hold and developed in the EU, as the Commission "was busy drafting some 300 single market directives which would form the skeleton of a single European market" (Balanyá et al., 2000: 3). Euromines, for instance, was set up in 1996 to represent national mining associations vis-à-vis EU institutions. In this period, the EC

> *began to engage industry in strategic alliances … and has since actively encouraged the involvement of large corporations and pan-European industry associations in the Brussels political apparatus. These partnerships add weight to EU initiatives, and they tend to strengthen the Commission's position vis-à-vis member state governments (Balanyá et al., 2000: 4).*

This proved helpful for corporations to enforce their interests, because many decision making processes tend to be less transparent and accountable than national government decisions.

While civil society organisations have also been gaining more influence over this time period, their influence continues to be significantly weaker than that of their corporate counterparts. The latter dominate both quantitatively (in number of lobbyists, number of meetings with policy makers and resources at disposal) but also in terms of diversity of "types of organisation at the European level through which it can represent its views" (Grant, Matthews and Newell, 2000: 46). Large corporations tend to have their own Brussels representatives, but are also members of different industry representation bodies, roundtables, product-level associations, informal dining clubs and others – in addition to national governments that can often be persuaded to lobby for them (Grant, Matthews and Newell, 2000). NGOs' financial and human resources are much smaller, they tend to be consulted less, and their voice is given less weight. Although the situation is slightly better in DG Environment – where NGOs hold more power than in any DG – DG Environment is one of the weakest DGs vis-à-vis powerful DGs including Trade and Competition. These "structural advantages enjoyed by business interests aris[e] from the congruence between their objectives and those of the EU" (Grant, Matthews and Newell, 2000: 50) – in addition to imbalances of resources and relationships, but also the structure of the EC,

where CEOs act as "legitimizers for Commission officials, who, as appointed office-holders, h[o]ld no direct political legitimacy" (Green Cowles, 1997: 130; cf. also Bouwen, 2009).

This becomes visible upon examination of the meetings and communication outside of the NNL working group structure: A letter by civil society organisations concerned about the NNLi that was signed by a coalition of 64 European NGOs received a short email in response, thanking them for their letter and pointing to the public consultation on NNL. Mining industry representatives, on the other hand, were granted repeated face-to-face meetings with high-level EC officials, involving AngloAmerican, Euromines and what is likely to be AngloAmerican's PR firm, Hanover communications, with Francois Wakenhut himself [27]. In addition, EC officials held meetings to discuss the NNLi with MIRO, the German representation for mineral resources – followed by an invitation of two high-level EC officials to MIRO's meeting on resource security and environmental protection (which was accepted) – and with German industry association BDI and coal mine operator and energy company RWE. Unlike other industry presentatives, mining representatives advocate for a voluntary offsetting instrument – with maximum flexibility – which would also involve the agricultural, fishery and forestry sectors.

The close relationship is not only manifest in frequent meetings and close personal relationships, but also visible in the revolving door phenomenon: often, European commissioners leave their positions to join the private sector, especially in the extractive and energy sectors[28]. The EC itself, though usually displayed as the 'civil service' of the EU, holds policy initiating powers and "is fundamentally involved in EU decision-making at all levels"; it tends to define itself as "engine of integration" (Shore, 2007: 180). In his ethnographic work on EC elites, Chris Shore argues that "elite life among European civil servants is highly ritualistic, performative, and concerned with prestige and power between different Directorates" (2007: 183). The power game between DG Environment and DG Biodiversity, and the fear of loss of image testifies to this.

Large-scale *infrastructure* projects continue to play a particularly important role in legitimising supranational forms of governance and intervention. The aforementioned TENs of 12,000 km of new motorways, announced in 1991, are only one such example (Balanyá et al., 2000: xi). Today, these financial flows continue as part of the Connecting Europe Facility, which supports investment into transport, energy and digital infrastructures for the sake of growth and

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[27] Emails 25,27/09/2013; see FoI request.
[28] Former commissioner Peter Sutherland, for instance, later became chairman of BP and joined Goldman Sachs. Former commissioner Etienne Davignon later joined Société Générale and became director on the board of energy and utility company Suez, while working as special adviser to development commissioner Louis Michel.

competitiveness (EC, n.d.a). The €50 billion allocated in the EU 2014-2020 Budget demonstrate the critical and strategic importance of this policy area. Franco Bassanini and colleagues argue that "EU Project Bonds may become a central pillar in the building of European infrastructure and smart energy and information systems, to achieve the objectives of the EU 2020 Agenda" (Bassanini, del Bufalo and Reviglio, 2011: 2). Investment needs for TEN-Transport alone, it was estimated in 2011, amount to €500 billion, in addition to €1,100 billion to implement TEN-Energy projects before 2020 (Bassanini, del Bufalo and Reviglio, 2011). Many of these projects will cut through both protected and non-protected natural areas, leading to habitat loss and likely triggering local resistance across the EU. The transnational nature of such projects is what makes extraction, infrastructure and energy policy so important to EU integration and 'EU-(state-)building'. In a different context, Chris Shore has illustrated how the "instrumental use of cultural policy as a tool to promote the EU's integrationist agenda bore striking parallels with the strategies and techniques used by national elites in the formation of European nation-states during the 19th century" (2004: 10). This helps explain the renewed impetus that has recently been put into the EU energy policy – its new energy union – which lies at the infrastructure-extraction nexus.

Energy union

Further future demand for more flexible conservation policies, the ability to offset damage inside and outside Natura2000 sites and the need to avoid costly legal battles ia likely to be be intensified by Europe's new energy union. The creation of the energy union was one of incoming EC president Juncker's top political priorities, to "ensure secure, sustainable, affordable and competitive energy for all citizens" (EC, 2015: 1), reducing dependence on Russian gas, creating an internal energy market, increasing energy efficiency and reducing GHG emissions through carbon markets as well as research and innovation in low-carbon technologies. The energy union is embedded in a long history of energy in the EU. Following the initial cooperation in the European Coal and Steel Community, further harmonisation of member states' energy policies has long been on the policy agenda, but governments hesitated to transfer control over their energy policies to the EU (Andersen, Goldthau and Sitter, 2017). Historically, many member states have close ties to their energy companies (see chapters five and six), many of which remain state-owned; and governments consider control over their energy supply as a vital area of national policy (Harvey, 2015). Nevertheless, since the 1970s, the EU has been devising policies regarding supply security and promoted energy market liberalisation, and energy policy was institutionalised in the Lisbon Treaty in 2007 (Morata and

Solorio Sandoval, 2013: 556). Since then, the EC has developed an Energy Roadmap 2050 as well as ambitious plans to harmonise and unify energy markets in the energy union.

The union, spearheaded by Commissioner Maroš Šefčovič, known to have opposed ambitious climate policy in the past (Peterson, 2015), is hyped as a "grand Marshall Plan for the EU", hoped to "unlock investment across Europe, and ... bring lower emissions and greater efficiency" (Harvey, 2015). Critics warn that plans will further entrench and subsidise fossil fuels dependence, trigger centralisation of control over energy production and increase corporate power over energy policy (Queally, 2015). The union is widely seen as the product of geopolitical considerations to "loosen Russian grip on gas" (Traynor and Neslen, 2015). It demonstrates a shift from liberalisation of energy markets towards interventionism into domestic energy policy to promote international competitiveness, jobs and growth, in addition to leveraging power over Russia (Andersen, Goldthau and Sitter, 2017). In addition to the construction of new fuel pipelines and gas infrastructure (Harvey, 2015), the energy union requires a vastly expanded energy infrastructure including pipelines and power (smart) grid "capable of managing and distributing energy from renewable sources" (Šefčovič, 2014: 2) – in other words, the public financing of vast and profitable projects for private developers.

To create this integrated 'single energy market', the EC drew up a list of 195 key infrastructure 'projects of common interest', some of which – such as the Euro-Caspian Mega Pipeline – are considered ecologically disastrous and have triggered fierce resistance (Queally, 2015). And yet, these projects, according to the EC, may benefit from "accelerated planning and permit granting" and "streamlined environmental assessment processes" (EC, n.d.b). The renewable energy infrastructure expansion is expected to lead to biodiversity loss outside protected areas *and* cut through Natura2000 sites. For this purpose, the EC commissioned a number of high-level reports on the impacts of renewable energy infrastructure which recommend offsetting (Bertzky et al., 2011; Tucker and de Soye, 2009). Already in 2009, Graham Tucker from the IEEP (who also co-authored the EC-commissioned report on EU habitat banking introduced above) and Yves de Soye from IUCN, propose a NNL policy to mitigate the impacts of renewable energy infrastructure on EU biodiversity, "supported by a policy framework for biodiversity compensation, e.g. offsets and habitat banking" (2009: 78). In 2011, Monika Bertzky and colleagues also recommended the consideration of a NNL policy "for delivering habitat enhancement and restoration measures, which could help reverse habitat fragmentation" (2011: 27); particularly to compensate for the "unavoidable residual impacts" of hydropower dams (2011: 19). The recent – more stringent – ECJ interpretation of the nature directives may pose obstacles or costly delays (i.e. through court cases) to these megaprojects. Their

'unavoidable' impact on Europe's nature, and the need to manage increasingly militant resistance against such projects puts pressure on developers to invest in – and engage in policy discussions around – offsetting.

Offsets may further be required under potential lending requirements by international financial institutions (explored in the next section): the energy union is meant to leverage private finance guaranteed by public money (Crisp, 2015). For this purpose, two financial instruments – the Natural Capital Financing Facility and Private Finance for Energy Efficiency – were launched in 2014, providing some initial 200 million in long-term low-cost loans, technical support, and credit risk protection for banks (see below) – which include finance for biodiversity offsetting projects. "These blended funds can help biodiversity blossom and truly become an engine for growth", environmental Commissioner Karmenu Vella praised them enthusiastically (Crisp, 2015).

In the next section, I will further examine the role of these two financial instruments – and international financial institutions and their lending requirements – in the normalisation and institutionalisation of offsetting in Europe. Access to land and capital, I show, has come to rely on offsets in a number of industries.

4.3. Securing access to land and capital

Especially in the extractivist and infrastructure sectors, biodiversity offsetting has become an important mechanism to deal with increasingly difficult access to land and capital for new operations or project expansions. The lack of access to land has become a major concern for the extractive industry, as easily and cheaply accessible land has become scarce (more accessible deposits have been exploited, remaining deposits face physical constraints), and increasingly restrictive legislation makes it more costly and difficult to displace local communities (Seagle, 2012; explored in more detail in chapter five). Offsetting can not only provide a social licence to operate and a source of legitimacy through collaboration with conservation organisations and (supposedly) 'science-based' biodiversity consultancies, but also grant access to additional land for conservation (generating additional income through ecotourism, as Rio Tinto has demonstrated in Madagascar (Seagle, 2012; Kill and Franchi, 2016). While the relationship between extractivism, financial institutions and offsetting will be covered in more detail in chapter five, in the following section I introduce the role of project finance.

Following increased pressure and resistance against many of the large projects it financed, the World Bank started to strengthen its environmental lending criteria in the mid-1990s, as

multilateral development banks, development assistance agencies and other UN bodies began to demand EIAs for major developments (Dashwood, 2012). In light of a number of high-profile court cases involving mining companies in the 1990s, commercial banks and private insurers were getting concerned about liability risks (Dashwood, 2012; Danielson, 2006), and some public insurance institutions began to impose "green conditionality" (Wälde, 1992: 341). In response, the World Bank launched the two-year Extractive Industry Review (EIR) in the early 2000s, a multi-stakeholder round of negotiations, and then updated its performance standards on environmental and social sustainability for project finance. These standards define lenders' roles and responsibilities for manging their projects, as well as the requirements to receive IFC funding. Performance Standard six (PS6) of the eight standards is called "Biodiversity Conservation and Sustainable Management of Living Natural Resources" and its stated aims are to protect and conserve biodiversity, to maintain benefits from ecosystem services, and to promote sustainable development (IFC, 2012a, 2012b). It covers projects in modified, natural or critical habitats that potentially impact/are dependent on ecosystems over which the client has direct management control or significant influence. Under these standards (which are based on and explicitly reference BBOP principles), clients may degrade or convert natural habitats if "no other viable alternatives within the region" exist; following consultation, application of the mitigation hierarchy and mitigation measures designed for NNL (IFC, 2012a: 3). In addition to these requirements, legality needs to be demonstrated when the area concerned is already protected; consistency with the area's management plan, and consultation with "sponsors and managers" of the protected area, as well as, in seemingly secondary priority, with affected communities and indigenous people (IFC, 2012a: 5). Measurable conservation outcomes are "*reasonably* expected to result in no net loss and preferably a net gain of biodiversity" (IFC, 2012a: 2, emphasis added). Net *gain* is required in critical habitats.

The revised standards took effect six months after publication, and therewith became part of the Equator Principles (EP) (Exhibit II); a credit risk management framework for determining, assessing and managing environmental and social risk in project finance. Since the EP are based on IFC performance standards, PS6 therewith became a requirement for the over 70 export credit agencies and private commercial banks that adopted the EP. Although originally developed for project finance lending requirements only, the PS6 quickly became "more pervasive than expected" (Ekstrom and Rabenantoandro, 2012: 5). Financial institutions and other organisations quickly started "to regard PS6 as a benchmark of best practice generally, and to draw on it to guide lending and investment decisions for projects that do not involve

project finance" (BBOP, 2012: 6). It was adopted by some non-OECD[29] governments and supported by parts of civil society (Ekstrom and Rabenantoandro, 2012). Even multinational corporations that do not rely on bank financing are now subject to PS6 in case of "purchase or joint venture with smaller PS6 financed companies" and/or partnerships with "host governments with IMF financing" (Ekstrom and Rabenantoandro, 2012).

In a similar process to the IFC, the EBRD updated its social and environmental policy to include offsetting requirements in 2014 (EBRD, 2014a, 2014b). Following review and stakeholder workshops led by The Biodiversity Consultancy – active member of the *offsetting industry* introduced in chapter three – the EBRD published its Performance Requirement 6 (PR6) on "Biodiversity Conservation and Sustainable Management of Living Natural Resources". PR6 prescribes the adoption of the mitigation hierarchy, "with the aim of achieving no net loss of biodiversity, and where appropriate, a net gain of biodiversity" (EBRD, 2014a). The EBRD has committed to the promotion of EU environmental principles and standards, including the conservation directives. The latter marks the distinction between the IFC PS6 and the EBRD PR6 – while they are almost equivalent in substance, the EBRD PR6 requires projects to comply with the intent of the Habitats Directive. This shows the importance of the institutionalisation of NNL objectives in European policy making not only for national governments, but also for EU-supported projects in- and outside its territory. This influence will be illustrated in the following section.

Exporting offsets – examining (European) finance abroad

Particularly in Eastern Europe and states in the global South, civil society interviewees have reported, EBRD and IFC financing had an impact on the way large projects – such as mining projects or dams – are being carried out and permitted. Local campaigners involved in the anti-financialisation of nature network have criticised that PS6 and PR6 serve to legitimise the continuation of extractive megaprojects and are likely to facilitate their expansion even into protected areas. Since many countries in which the IMF invests have no legal framework for offsetting in place, international financial institutions have promoted changes to environmental laws and regulations in these countries, especially in the global South (Kill, 2016b).

Armenia serves as a good example to illustrate this point, pointing to the role of the IFC and the EBRD in 'importing' offsetting into a country without offsetting framework. Following an extensive Environmental Impact Assessment, the private corporation Lydian International[30] and

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[29] Organisation for Economic Co-operation and Development.
[30] Lydian International is registered in British Jersey, Channel Islands, and listed on the Toronto Stock Exchange.

its Armenian subsidiary (Geoteam CJSC) – with IFC and EBRD funding –applied for permission to develop the country's largest open pit gold mine in Amulsar.[31] The EBRD is providing equity financing, "earmarked for financing of the Environmental and Social Mitigation Measures … [including] a *biodiversity offset programme*" (EBRD, 2016, emphasis added). Following initial failure to engage with stakeholders and to get a social licence to operate (bankwatch network, 2012), after extensive baselines studies and collaboration with different institutions and experts, the company drew up a Biodiversity Management Plan with the aim of *no net loss of biodiversity*. To compensate for 'residual impacts' of the mine on highly sensitive internationally protected flora (particularly the potentilla plant) and fauna (especially the brown bear), the company is implementing a conservation offsetting programme designed by the UK-based environmental consultancy and BBOP member Trewood. In its Biodiversity Action Plan, prepared by Trewood, the company commits to *net gain of biodiversity* with respect to impacts on critical habitat. Specificities are laid out in its Biodiversity Offset Strategy, where Lydian promises the "establishment of a new National Park at Jermuk" (appendix 3: 6), to prevent overgrazing and poaching: "Gains would be achieved by a) conferring protection from disturbance and poaching through establishment of the Protected Area and b) improving condition of degraded natural habitat" (appendix 3: 6). To protect threatened species, the company further plans to conduct research into moving endangered Potentilla porphyrantha plants from the mountain, cultivate and return them upon mine closure and a baseline study looking at the presence of brown bears. The National Park planning process is being led by WWF Armenia, and the methodology to calculate offsetting metrics (figure 14) – remarkably similar to the British metrics – by Treweek consultants.

Table 1 Framework for Biodiversity Offset Metrics

		Biodiversity Distinctiveness			
		Very Low (0)	Low (2)	Medium (4)	High (6)
Condition	Optimum (4)	0	8 [0.33]	16 [0.67]	24 [1.00]
	Good (3)	0	6 [0.25]	12 [0.50]	18 [0.75]
	Moderate (2)	0	4 [0.17]	8 [0.33]	12 [0.50]
	Poor (1)	0	2 [0.08]	4 [0.17]	6 [0.25]

Figure 14 Metrics used to calculate NNL in Armenia (Treweek, n.d.)

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[31] Amulsar Mine is meant to begin operations in 2018, with the planned extraction of 10m tonnes of ore (containing 7.8 tonnes of gold) per year, and close in 2029 (Liakhov, 2017). "The Armenian government", Peter Liakhov has argued, "charges some of the lowest fees for exploiting natural resources in the world, and after a 2012 legislative change promoted by the World Bank, doesn't even charge companies for cleaning up after mining operations cease" (2017).

Campaigners criticise that the offsetting area is already a national protected area, financed by the Austrian and German development agencies, UNDP and WWF, and is not currently under threat of destruction (thus lacking additionality) (personal communication). The offsetting project does not address the likely negative effects on the region's mineral water, the nearby Sevan lake and neighbouring villages. Villages are likely to be affected economically and fear displacement, destruction of social fabric and loss of livelihood due to poisoning of apricot fields – which will disproportionately affect women, a campaigner explains. She further criticises the (ongoing) legal changes in national policy as the project devolves. One campaigner explains: "Legislation is being amended in line with the project needs. Not the other way around. [This is] corruption" – whereas previously, Lydian would not have been allowed to mine in this highly vulnerable and protected habitat, the company was able to alter legislation "in their interest" (personal communication). This shift from companies "breaking the law to changing the law", another campaigner explains (personal communication) is significant because it shows precisely what biodiversity offsetting represents: the flexibilisation of legislative limits and the collaboration with state actors for access to finance and to land.[32] Conditionalities imposed by international banks that trigger legislative changes in host governments are not new – just think of structural adjustment programmes in the 1980s. In the face of resistance against offsetting and slow progress with regards to the NNLi, the EU has now, however, set up a facility that allows for the *direct financing* of offsetting activities without a legal framework in place – the Natural Capital Financing Facility (NCFF).

Natural Capital Financing Facility – privatising public conservation funds

The NCFF is a green financing scheme that operates as a joint facility between the EC and the EIB. Its pilot phase started in 2014. With an initial budget of €100 million (and an additional €10 million for technical assistance), it is supposed to trigger private investments for 10-12 revenue-generating pilot schemes, based on debt and equity funding (Gilbertson and Coelho, 2014). Each of these projects will receive between €5 and €15 million, either through debt funds or through financial intermediaries (credit lines). Biodiversity offsetting is meant to be a key part of these projects, in addition to green infrastructure, Payments for Ecosystems and Pro-biodiversity and adaptation businesses. Funding for the NCFF comes from the LIFE programme, the key EU funding instrument for environmental protection, nature conservation, and climate change mitigation and adaptation. Half of its budget supports good practice and demonstration

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[32] Others involved in the offsetting plans are the University of Cambridge Botanic Garden (UCBG) and WWF Armenia, as well as a number of Armenian scientists and members of the environmental community. According to one interviewee, the mining company spent significant funds on the EIA, gaining support from the scientific and environmental community; "Everyone from [the] scientific community [has been] bought up" (personal communication).

projects that contribute to the implementation of the EU biodiversity policy. Since its establishment in 1992, it has (co-) financed over 4,500 conservation projects with approximately €3.1 billion, most of which is dedicated to the Natura2000 network (EC, n.d.c). Whereas until 2014, all LIFE funding was awarded as public grants to conservation and environmental projects, the new (2014-2017) programme has been presented as especially flexible and strategic, as the funding is being channelled through the EIB in order to provide loans and finance for bank lending to offsetting and green infrastructure projects (Gilbertson and Coelho, 2014). The NCFF thus constitutes another pilot project, designed to "test the profitability of switching from public grants to using other financial instruments" (Gilbertson and Coelho, 2014: 5). It can also be read as *outsourcing* and *de-democratisation*: EC DG Environment will now be responsible for policy and decision making while the EIB manages NCFF "by providing a risk-sharing facility for private financial institutions, tech support and long-term loans" (Gilbertson and Coelho, 2014: 5). The money that is channelled to finance (private) offsetting projects (outside Natura2000 sites), consequently, is not only diverted from the EU conservation budget, but also originally intended for Natura2000 site conservation – which is already chronically underfunded.

These funds are now managed by a non-democratic financial institution that lacks public accountability, and their diversion from existing funds raises problems of additionality. The NCFF thus seems to constitute a rather convenient way to bypass public opposition to offsetting and all of the 'difficulties' associated with having to follow (relatively) democratic and transparent policy making procedures – institutionalising "by doing" (personal communication with campaigner). It further illustrates how so-called private 'markets' for conservation finance rely on public financing (Kay, 2018) – in this case, public conservation funds.

4.4.   Dealing with dissent

It is not a coincidence that the industries most interested in biodiversity offsetting internationally and as part of the NNLi (energy, mining, cement, construction) are among those most targeted and resisted by indigenous groups, social movements and some (Western) environmental NGOs and conservation organisations. Mining companies, introduced in more depth in chapter five, deserve some special attention here. Especially, but not exclusively, in the global South, (large-scale) mining operations – often conducted by London-based mining conglomerates – have always been sites of gross human rights violations and ecological destruction, but also of resistance and contestation. Examples include the infamous Columbian Cerrajón mine, but also the Welsh Ffos-y-fran mine or the German Hambach coal mine

discussed in chapter six. With the material and geographical expansion of mining into more ecologically sensitive and socially vulnerable areas in the last decades – reaching new frontiers, moving more soil and water than ever, and affecting more communities – resistance to mining projects is becoming a serious concern for mining companies (Conde Puigmal, 2015: 5; see also Evans, Goodman and Lansbury, 2002). Whereas historically, opposition to mining was linked to labour and health issues, today, communities are increasingly fighting mining projects for environmental justice reasons and challenging corporations and governmental authorities over their lack of representation and participation in decision making (cf. Conde Puigmal, 2015) as well as the imposition of industrial development with little input. This poses new challenges to corporations' social acceptance and licence to operate – especially when protests are linked transnationally (becoming more visible also in the global North, exposing companies to NGO campaigning and consumer boycotts), supported by solidarity groups abroad, and linking into struggles against imperialism, patriarchy, corporate exploitation and 'green growth'. In response, I will show in chapter five, corporations are in need of new sources of legitimacy.

In Europe, transnationally organised resistance against coal mining in particular has been growing over the last decades, with resistance intensifying. In May 2016, as part of the global campaign 'Break Free from Fossil Fuels', 400 activists shut down the UK's largest open-cast coal mine, the Ffos-y-fran mine (the expansion of which is supposed to be biodiversity-offset). Shortly after, in Lusatia (Germany) 4,000 activists from across Europe blockaded a Vattenfall coal power station for three days, forcing it to shut down completely and causing considerable financial damage. Across the world, an estimated 30,000 people took direct action against coal mining in May 2016 alone, risking arrest and state violence to interrupt coal mining (Break Free, 2016). Images and videos of these actions were shared by hundreds of thousands, triggering renewed debate around coal.

In the face of this opposition, loss of access to (cheap) land and social licence to operate, and stricter project finance lending requirements that affect access to capital and cost time and resources, the industry has had to invent new ways to legitimise its operations. Under the banner of "green mining" or "sustainable mining", biodiversity offsetting has been one of the mechanisms the industry has been using for this goal, as I show in chapter five (cf. Seagle, 2012). The importance of biodiversity offsetting not only lies in its claim to compensate for the ecological impacts of mining projects and therewith ensure continued growth. More importantly, this particular social licence to operate is based on the enrolment of old and new conservation actors into the "business and biodiversity" agenda to construct the corporate sector as "saviours of biodiversity", to pacify resistance and to divide-and-conquer movements

and NGOs. One biodiversity consultant, responsible for large offsetting projects for mining corporations, explains their strategy to minimise local resistance:

> *The advice I always give really early on … is to go to these groups individually. Often, they are fighting amongst themselves. [Make use of] messy relationship between them and between government NGOs, work out stakeholder group and talk to them … [tell them:] you won't like what we do, but we are trying to minimise impacts. Often, we end up hiring people, specialists, through these NGOs (B7).*

Similarly, Lori Anna Conzo's quote at the beginning of the introduction illustrates the role of offsetting in managing *people*, not *nature*. In the following sections I will explore two ways through which this management takes place: firstly, the enrolment of (large, Western) conservation organisations in conservation partnerships around offsetting projects globally, and the NNL working group more specifically, hand in hand with the delegitimisation and marginalisation of grassroots organisations (see also chapter five), and secondly, the 'depoliticisation through technicalisation' in the NNL working group discussions.

Pacification through dialogue: introducing corporate-conservation partnerships

Conservation partnerships, Kenneth MacDonald argues, reflect the ideological and material alignment with the corporate sector that can be traced back to the changing institutional context towards more (externally funded) project-based conservation and a new governance network involving external control of conservation organisations, and the associated internal restructuring and new entrepreneurial strategies inside organisations (2010a, 2010b; cf. Dauvergne and LeBaron, 2014). These changes were partly a response to the sharp reduction in conservation funds and shifting of funding to large conservation organisations, which constituted a 'political opportunity' for big NGOs to become serious actors in environmental governance, but also derived from cynicism about the little change that could be brought about through engagement with international organisations (Newell, 2000). The less confrontational attitude and desire to collaborate with corporations of environmental NGOs more widely, Peter Newell has argued, is further related to the growth of many NGOs, which "means that they cannot afford the risk of litigation undertaken by companies against their direct actions. They now have sizeable assets that would be threatened by successful court action against them" (2000: 36-7). NGOs thus 'de-radicalised', and their roles shifted from *knowledge producers* to *consultants*, *fund raisers* and *project implementers*, financed through international project finance and development funds (MacDonald, 2010a). Reliance on dependable funding sources and legitimacy led them to embrace the international neoliberal conservation agenda, Kenneth MacDonald argues, as they increasingly sought for ways to make biodiversity "pay for its own

salvation" (2010a: 521). At the same time, such partnerships have helped transnational corporations display themselves as "champions of sustainability" (Dauvergne and LeBaron, 2014: 153).

The emergence of the CBD and the Global Environment Facility, and the associated consolidation of state actors in biodiversity governance, shifted financial resources from core funding towards project-based funding related to the CBD's programme. This reduced organisations' agenda setting power while granting more power to the corporate sector. It further paved the way for corporate-NGO partnerships to fulfil CBD conditionalities and gain legitimacy, grounded in the need to develop "working alliances" (MacDonald, 2010a: 534). Competition for market share and brand recognition with "conservation competitors" increased (Igoe, Neves and Brockington, 2010; Chapin, 2004). Alliances with indigenous peoples and local communities "largely disappeared", Mac Chapin argues, "displaced… by talk of changed priorities, with a new focus on large-scale conservation strategies and the importance of science, rather than social realities, in determining their agendas" (2004: 18). For the corporate sector, this 'engagement' increased legitimacy vis-à-vis public and policy making circles, helped justify its involvement in international biodiversity spaces (such as CBD meetings), and to control their environment to ensure access and use rights to resources (cf. Chapin, 2004).

This ideological alignment, demonstrated discursively – as organisations were "finally speaking the language of business", as WBCSD president Peter Bakker praised at the Second International Forum on Natural Capital in 2015 – but also through the provision of expertise and ecological data that is indispensable for corporate biodiversity management, not only changed the focus of many organisations' work, but also their internal structuring. Increasingly, conservation organisations started to be managed like businesses – hierarchically and top-down – to fit with the prevailing corporate logic, manifest in the importance of 'acquisition divisions' (with fundraising becoming a top priority), PR departments and communication strategies; going hand-in-hand with the 'professionalisation' or corporatisation of organisations, and the corporate branding – worth millions of dollars, in many cases – served and defended by high-powered lawyers and marketing consultants (Dauvergne and LeBaron, 2014). The pressure to achieve short-term results and not upset corporate funders changed the tone and content of campaigns, and attracted criticism that "fixation with fundraising ... trumped truly effective campaigning" while ignoring systemic issues of neoliberal capitalism (Jarman, 2016; see also Dauvergne and LeBaron, 2014; MacDonald, 2010a, 2010b).

These changes are further reflected in recruiting practices. Today, board members, directors or executives travel back and forth between institutions. Robert Napier, for instance, became WWF's new chief executive in 2000, after having been a senior manager at Rio Tinto (then RTZ), Fisons, known for its peat digging activities, and quarrying firm Redland. Corporate-NGO offsetting partnerships further entrench these relationships. In its pioneering offsetting project in Madagascar, Rio Tinto collaborates with IUCN, Kew and Missouri Botanical Gardens, and a number of international and Malagasy conservation organisations (e.g. the national partner of BirdLife International) – as well as academics that serve on the project's advisory board (Kill and Franchi, 2016). The involvement of, and legitimacy associated with, conservation organisations (hand-in-hand with marginalisation of more radical movements) make local resistance more challenging – especially when communities are misinformed and not aware that they lose their livelihoods because of biodiversity offsetting, rather than 'regular' conservation efforts, as in Rio Tinto's Madagascar project (Kill and Franchi, 2016). At the same time, conservation organisations that might otherwise criticise the project for its ecological impacts are 'co-opted' and drawn into the project. Already in 1999, Philip Mulligan warned of the potential of the project to greenwash and – through participation and monopolisation of the scientific discourse around the project – legitimise Rio Tinto's mining activities while constructing local activities as harmful. He argues that "[t]he whole process of environmental and social impact studies is designed to co-opt people into a process of approval. Outcomes are validated by a process whose terms are set by the company" (1999: 55).

Such divide-and-conquer strategies contribute to internal division in the conservation community, where more mainstream conservation organisations are pacified and more radical grassroots group are marginalised. Cooperation between (mining) corporations and large conservation organisations in the global South has led grassroots groups to openly criticise and distance themselves from such organisations. FoE International, for example, has voted not to engage in any collaboration with WWF, maybe the most influential global conservation organisation, due to its partnerships and projects in the global South, which led to violent abuse and displacement of local communities. They have become "part of the problem, not the solution" according to Southern FoE groups (interview), not only because of their conservation projects, but also their self-censorship, so as not to "'jeopardize' future efforts to secure donations from certain industrial sectors", as WWF officials have been reported to state during a board meeting (Glüsing and Klawitter, 2012). Survival International recently launched a formal OECD complaint against WWF for violent abuse and land theft "carried out by anti-poaching squads which it in part funds and equips" (2016).

Strategic partnerships, sometimes in combination with the systematic marginalisation of grassroots or more 'radical' movements (Brock, 2015), thus helped entrench the growing material and ideological divide between international conservation organisations and grassroots groups (MacDonald, 2010a, 2010b). Internal opposition against partnerships – e.g. within the IUCN at World Conservation Congress – has always existed, but has become less visible over the years (MacDonald, 2010b). Some of this discussion is being shifted to online spaces, such as debate on the new IUCN biodiversity guidance on offsetting (IUCN, 2016; BBOP, 2016). At the same time, such partnerships have been incentivised by international institutions.

The EC financially supports business-NGO collaborations by means of the Business and Biodiversity programme, funded through the LIFE programme – though many projects, tellingly, are implemented through the Executive Agency for Small and Medium-sized Enterprises. These are increasingly run according to principles of cost-efficiency, competitiveness and profit-orientation, an interviewee reports. A similar trend can be observed with the LIFE programme, which is supposed to test new or novel (read: business-led) ways of dealing with environmental problems and involve the establishment or use of 'good practice'. Through the Business and Biodiversity Campaign (under the slogan "Biodiversity – it's your business", Global Nature Fund, 2013) the EC promotes NGO-business partnerships, helps showcase business commitments and initiatives, and promotes "Business and Ecosystem Services" opportunities.

This not only normalises the idea of corporate conservation, but also the ecosystem services and natural capital framing, and paves the way for offsetting and other 'innovative' instruments (as explored in chapter three)[33]. The NNLi thus not only responded to the increasing resistance against large-scale developments that can be witnessed in the EU, but also provided a forum to bring together 'biodiversity stakeholders'. It acted as a vehicle around which organisations were mobilised, engaging more 'moderate' organisations while excluding more grassroots or 'radical' groups. In the following section, I will explore some of the ways this was done *within* the NNL working group.

Depoliticisation and the politics of stakeholder engagement

The setup of the working group – its composition, outlined in the beginning of this chapter, and its agenda, with meetings structured around PowerPoint presentations of case studies and corporate projects, lessons learnt and challenges to address – was intended to facilitate a

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[33] Another example are the campaign's public landscape auctions, where "bids are made for elements of the landscape or local biodiversity" (Global Nature Fund, 2013: 5). These auctions are advertised as follows: "The successful bidder supports the management and preservation costs of the chosen item. The expertise center Triple E has developed the concept. It is an original way for businesses, corporations and other interested parties to actively become a stakeholder of the unique biodiversity we have in the EU. Make your bid for nature!" (Global Nature Fund, 2013: 5).

particular kind of discussion. Rather than engaging with the fundamental problems of offsetting, the underlying assumptions and ideologies, or the social and ecological effects, the working group negotiations were shaped and framed in particular ways – through the agenda that had been prepared, the questions raised, and the problems posed. The framing was what that James Ferguson would call "anti-political" (1994; Büscher, 2010; Mosse, 2004). Anti-political policy discourse helps to "conceal ideological differences, to allow compromise and the enrolment of different interests, to build coalitions, to distribute agency and to multiply criteria of success within project systems" (Mosse, 2004: 663). The objective of the working group was never to debate *whether* NNL was to be achieved through offsetting – "the objective of the working group was to *support* the EC", a working group participant explains (C1).

This began with the selection of working group members – the vast majority of non-governmental members represent industry and land-owners as well as 'experts' (mostly members of the *offsetting industry*) with few critical voices in the room. Through the EC's framing as 'experts' – evoking associations as non-political, neutral and objective – and by scheduling much of the available (and scarce) working group time to these 'experts' and their presentations, the agenda was shaping the discussion. At the stakeholder workshop "Policy Options for a No Net Loss Initiative" (03/07/2013), for instance, all sessions (apart from opening and closing speeches) were led by these 'experts' – all consultants – on the need for measures to achieve NNL, the mitigation hierarchy, residual impacts and lessons learnt. These 'experts', a working group member tells me, were granted a kind of authority that was hard to contest by those more critical of offsetting or those new to the field.

The agendas of the meetings resembled a ritualistic performance of the ever-same agenda points: updates from other working groups, presentations of case studies, policy instruments, lessons learnt or a new offsetting study, discussion of the four working documents, and wrap-up – broken up by two coffee breaks and a lunch break – and the occasional extra agenda item. 'Experts' were invited to present case studies that became the starting point for debate. Whereas inherently political and contentious, these discussions were presented as "technical discussions". A couple of discussion points deserve more in-depth analysis.

One ever-recurring theme in the working group were the *limits of offsetting*. These discussions were particularly important for the discursive establishment of offsetting because it was precisely through the emphasis on 'what *cannot* be offset' that the debate on 'what *can* be offset' was settled. Through constant reiteration that development in Natura2000 sites *cannot be offset*, for instance, other natural areas *become* offsettable. These boundaries may be

contested: a number of industry representatives and 'experts' continued to challenge the 'limits' demarcating Natura2000 sites. The delineation of the 'un-offsettable' – however unstable – is furthermore crucial for the perceived legitimacy and credibility of the group, and the pacification of critics. A similar function is played by the design principles to ensure *best practice*, following – not surprisingly, and just like most definitions and principles – BBOP's offset design process. These safeguards act as insurance against critique and uphold the *ideology* of offsetting. The most important vehicle through which 'best practice' is to be ensured (reiterated in governmental documents, bank regulations and elsewhere) are the BBOP standards, which have become a fundamental pillar of international biodiversity offsetting governance – powerfully represented by Kerry ten Kate herself. "Some impacts cannot be offset", she emphasises repeatedly (e.g. ten Kate and Narain, 2012: 33), which implies that all other impacts *can* be offset. Similar statements are made by natural capital advocates and the *offsetting pioneers* introduced in chapter three, in order to pre-empt critique, to control the *framing* of critique, and then to channel critical debate towards methodological challenges and technical solutions introduced below. In effect, these boundaries and safeguards help make biodiversity – and biodiversity performance – auditable, account-able and measurable. The constant qualification and relativisation is crucial. The very emphasis that "[e]ven within 'like for like', not all hectares are equal" (ten Kate and Narain, 2012: 35), for instance, and the idea of "offsetability thresholds" (Ledoux, 2012: 7) end up having the opposite effect – creating the illusion of fundability and offsettabiliy, while normalising offsetting, appealing to reason, relativising initial scepticism and easing fears.

Having noted the importance of *boundary drawing*, I now move on to another crucial mobilising metaphor in the NNLi working group discussions: the *mitigation hierarchy* (figure 15). Corporate conservation – and biodiversity offsetting in particular, I have shown in chapter three – relies on *spectacular performance* (Igoe, Neves and Brockington, 2010). The mitigation hierarchy is a great example of such spectacle that serves to visualise a particular abstract conceptualisation of nature – categorised into red or yellow when 'impacted'; green when offset or 'saved' (figure 15) – while invisibilising the actual destruction of particular places, the social relations around them, the epistemicide and the (slow) violence inherent in, and the corporate and state power mobilised for this end. Once again, the mitigation hierarchy represents the epistemologically violent process of transformation and (double) abstraction (chapter three) required for offsetting.
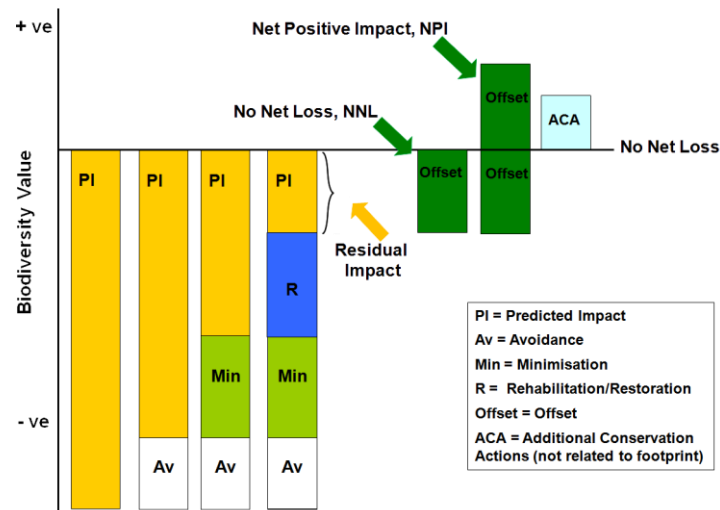
Figure 15 Mitigation hierarchy according to BBOP (2014)

Many different versions of the mitigation hierarchy exist, in various shapes and colours, and yet the design choices are never problematised – such as the dark green colouring to represent the sustainability of the project, the simplistic, sharp contours that hide the uncertainties and possible failure of the restoration activities that may be counted as offset, the smaller size of 'residual impact' and 'offset' in relation to 'predicted impact' and 'minimisation', the linear nature of the process and the representation of nature as stable and static system, rather than fluid and responsive. The image thus constitutes a powerful tool to structure NNL thinking, as well as a symbol of authority and expertise, mobilised to anchor the debate around offsets. It serves to visualise and represent offsetting as science-based, or 'serious business'. Once again this allows positioning the mitigation hierarchy as insurance against doubts and critique – often perceived as too complex (and intimidating) for non-experts, yielding authority to those able to mobilise it in their interest "[You d]emonstrate the entire mitigation hierarchy – [critics] get over doubts and concerns [that offsets act as] licence to trash", an environmental consultant explains (B7). In effect, the mitigation hierarchy thus helps position offsetting as the outcome of a rational trade-off; depoliticising NNL negotiations through the representation of conflict as technical, while obscuring the politics of and around nature, the destructive corporate agency and the violence against human and nonhuman nature.

The second important mobilising device in NNL negotiations were the recurrent case studies and pilot projects that travel across places and spaces of offset making (as introduced in chapter three), and continue to be recycled and mobilised for the political project that offsetting constitutes. Their presentations resemble rituals not only to ensure the smooth running of the meetings, but to 'thingify' offsetting. It should come as no surprise that many of the case studies that were introduced at the conferences explored in chapter three re-appear at NNL

working group meetings – such as the (contested) Ambatovy mining project in Madagascar or the Strongman pilot project, designed to offset Solid Energy New Zeeland's coal operation, both BBOP pilot projects. Not only do these give corporations and 'experts' the chance to demonstrate their political goodwill, their ecological expertise and complex methodologies (resembling product advertising for the *offsetting industry*). They also create the impression of a well thought-through offsetting 'practice' (qualified, of course, by the constant emphasis on the need to fine-tune methods and further develop assessments and better standards) that can be *trusted* to deliver NNL in Europe.

What these concepts and case studies have in common is that they enable the depoliticisation of the debate through their framing around *methodological challenges*. This framing around methodological challenges and the boundaries of offsetting, and the structuring of negotiations around success stories, pilot projects and lessons learnt, makes dissent more difficult. Space for dissent is narrowed down to revolve around methodologies and data, to do with *mitigation replacement ratios* and *currencies* (How to measure biodiversity? How measure its 'quality'? What unit of measurement and what ratio should be used to calculate required offset area?), definitions of NNL, ecosystem functions, critical habitat, additionality and temporality. The framing as methodological challenges invites solutions based on better methodologies and assessments, better metrics and baselines, better data or more capacity building. Importantly, it shifts responsibility to practitioners and 'experts' who are in charge of monitoring, measurements, restoration success and compliance with performance standards.

Despite the contested nature of the accounting technologies, the metrics and assessment methods employed (Robertson, 2012; Lockhart; 2016; Carver and Sullivan, 2017), and the importance of equivalence and additionality, little space was granted for real debate on these issues, a working group member recounts. Instead, 'experts' were to pass on expertise to those new to the group, a number of whom had never heard of offsetting before and struggled to follow the debate. "It was so complicated and technical that I abandoned the group afterwards", I was told by one working group participant who attended the first meeting; another one explains that "the language [was] too technical … [I] had no idea what was going on" (B7). Yet, this framing around *methodological challenges* and *lessons learnt* did not go unchallenged: critics continued to raise more systemic issues including the *drivers* of biodiversity loss in Europe (Should agriculture be included in the initiative? How can the EU's Common Agricultural Policy be reformed? What about fisheries?). These debates tended to be shut down quickly, I am told by one of these critics, or reframed. The issue of habitat fragmentation as a major cause for biodiversity loss, for instance, was easily reframed in

technical terms that allow for offsetting to be situated as a solution; by focussing on offsets to achieve habitat connectivity and green infrastructure funding.

The working group itself thus engaged stakeholders not only through debate that – through this focus on methodological challenges, mobilising concepts and case studies – contributed to the normalisation and legitimisation of offsetting, channelling NNL debate. It played into wider reconfiguration of EU policy making and its political landscape and the further entrenchment of the role of industry associations and corporations as legitimate actors in the conservation arena, while dividing-and-conquering the movement and co-opting critical voices. The role of the working group discussion in reconciling different stakeholders' views becomes visible in this quote by one of the 'experts':

> *People came to [the meetings] from philosophical standpoints, not problem-solving, technical, or policy relevant. [It was] all about building capacity for policy relevance … Decision making in the EU – [is all about] reaching consensus (C1).*

"[It was a] trust building exercise", another participant states. That is not to say that NNL discussions were not very contentious or without conflict. The most contested discussion points revolved around the question of whether compensatory measures should be allowed inside Natura2000 sites; whether activities outside the network could finance Natura2000 sites; the scope vis-à-vis other sectors; the inclusion or exclusion of agriculture, fishery and forestry; the question of biodiversity versus ecosystems (services) and landscape approaches; the (lack of) emphasis on avoidance; the question of voluntary versus mandatory instruments; and the possibility of cross-boundary schemes – where no consensus was reached until the end. Differences in opinions and interests became visible particularly between corporate representatives, environmental consultants and conservationists, and these conflicts played a role in the 'apparent death' of the initiative which will be briefly discussed in the conclusion.

4.5.   Conclusion – flexibilisation of limits and accumulation by restoration?

> *In a nutshell, the right to ignore a legal limit can be bought (Kill, 2016b: 6).*

Since the last meeting of the NNL working group, the NNLi has "lost steam", a conservationist describes, and died what he calls an "apparent death" – ready to come back when needed. This loss of steam, I suggest, is due to a number of reasons. Firstly, the strong and unexpected mobilisation and resistance against the initiative on the part of civil society, combined with increasingly critical public media coverage (overlapping with the resistance against British pilot projects) and, importantly, huge civil society mobilisation against REFIT, took the EC by surprise and made the implementation of a controversial initiative more difficult. Secondly, I suggest

that there was a conflict of interests within the working group between two particularly important groups that were in favour of a NNLi for different reasons: Whereas many of the 'experts' (environmental consultants) advocated a stringent application of the mitigation hierarchy, the use of complex methodologies and precautionary measures to ensure NNL or net gain of biodiversity, these aims may have clashed with the aims of industry representatives to flexibilise existing legislation. Many industry representatives favoured the integration with (and weakening of) the existing system, advocating acceptance of "trade-offs, reasonable displacement and temporary degradation" of what they call 'ordinary biodiversity', and backing the simplest and cheapest way of offsetting (comparison of habitats rather than complex metrics) with very few categories (such as 'forest', 'mountain' or 'coastal'). The EC, on the other hand, did not stand united – the Commission should not be seen as a single, unitary organisation, Pieter Bouwen has taught us (2009: 19). It was lacking the necessary enthusiasm for driving the process forward – initial top-level support withered, and many EC officials had been sceptical of the initiative from the start. Industry representation was divided on the inclusion of agriculture, forestry and fisheries – the only reason European farmers and landowners joined the working group in the first place was to ensure they would not be covered by it. Many member state representatives, on the other hand, lacked pre-knowledge and understanding, causing frustration among other working group members.

Nevertheless, bits and pieces of the initiative remain alive; they re-appear under different names and in different guises. To facilitate the 'smarter' implementation of the nature directives (and following the defeat of REFIT), offsetting has recently become part of the new EU Action Plan for nature, people and the economy (EC, 2017a). Under this new plan, the EC will "[d]evelop guidance and a set of practical tools to support the integration of ecosystems and their services into planning and decision-making processes at local, regional, national and EU levels (by 2018)" and assist planners and decision-makers to "implement best practices for plans and projects to minimise and *compensate* for unavoidable residual impacts on ecosystems and their services" (EC, 2017b, emphasis added). The (worrying) spirit of the action plan becomes clear in this introduction:

> *Cases of inflexible application of species protection rules, delays and unnecessary burdens in permitting procedures and insufficient stakeholder awareness and participation can create unnecessary tensions between nature protection and socio-economic activities. The action plan will set out measures to promote smarter participatory approaches and encourage full engagement of landowners and users (EC, 2017c).*

Interesting, and testifying to the toxicity of these terms, is the avoidance of any mention of *offset* or *NNL* – instead, the plan is framed around compensation and flexibilisation.

The current political climate leaves little hope for a biodiversity policy that challenges, rather than strengthens corporate power and puts nature above economic growth. Conservation campaigners and critical social scientists have played a core role in dampening the initial enthusiasm among conservation groups and policy makers over the last years, but even if ambitious NNL legislation is currently out of sight, many of its underlying assumptions and drivers live on. Discussions around the NNLi – as well as the increasing use of Article 6(3) of the Habitats Directive discussed above – have opened the door to a more fundamental re-definition and rethinking about limits to corporate activity within the EU and beyond. In this redefinition, the idea of 'inevitable destruction' (or 'residual impacts', to use the language of the mitigation hierarchy), campaigners fear, becomes 'allowable destruction'.

This implies that offsetting can give corporations certainty and predictability in their accounting practices, as 'limits' to the acceptable loss of nature become reconceptualised as offsetting 'costs' which can be managed. Limits to destruction become locally meaningless, as they are turned into 'net' limits, as part of 'net' positive impact policies or goals. Limits can lose their 'absoluteness' and become negotiable – breaching them is not penalised (through penalty payments or permit withdrawal), but can be incorporated as project cost into corporate accounting frameworks (Kill, 2016a). Legally, this implies a move from fines to costs: costs that can be incorporated into business operations and accounted for in cost-benefit analyses, therewith increasing certainty over the future and managing risks associated with biodiversity loss, but more importantly reputational and regulatory risks associated with corporate exploitation of human and nonhuman nature. This makes operations – and future expenditures – more calculable, changing corporate strategies and business models, an interviewee explains. David Moreno-Mateos and colleagues have argued that

> *Offsets erode the very meaning of strict protection of species and habitats. By allowing exceptions, offsetting policies state that it is not necessary that every individual of a species or element of a threatened habitat is protected to ensure its persistence.... [Offsetting] allows bypassing restrictive regulations, in particular, by those who can afford to pay for it (2015: 557).*

Uncertainty, aggravated through resistance, used to be a liability, but is now turned into a profit opportunity (chapter three, see also Soederberg, 2016) for a new industry eager to transform this risk by means of calculative devices and innovative new methodologies and techniques.

While in theory, offsets should constitute the *last resort* in the mitigation hierarchy, their introduction can alter incentive structures away from avoidance and minimisation, campaigners fear (and anecdotal evidence already confirms). A restoration ecologist admits: "My concern for a NNL Initiative is that the concept could be abused to destroy nature if the mitigation hierarchy is not fully and properly implemented, as we all know that law enforcement is often weak". This may ensure the granting of project permits that may have otherwise not been granted – in areas that are currently protected. Biodiversity offsets can therefore constitute a way to flexibilise these limits, most dangerously those related to Natura2000 sites. The risk of not receiving planning permission or a concession is thus – for a financial price – turned into "greater certainty for businesses", as the Australian environmental minister described the aim of offsetting (Commonwealth of Australia, 2012).

Whereas traditionally, penalty fees for violating limits were paid to state/regional authorities, offsetting costs are private expenditures paid to other private bodies (Kill, 2016a), usually those undertaking restoration work within or outside the EU, or towards the securitisation and arming of anti-poaching squats and military equipment as well as drones and helicopters to monitor conservation areas and local communities, where European corporations are involved in offsetting in the global South. Legal requirements for offsetting thus play an important role in the newly emerging European 'restoration economy' (WRI, n.d.) or restoration industry introduced in chapter three.

Accumulation by restoration?

The restoration economy facilitates what Amber Huff and I analyse as "accumulation by restoration" (Huff and Brock, 2018) – reflecting a fundamental shift to an "economy of repair" (Fairhead, Leach and Scoones, 2012: 242). "Rather than addressing the drivers of economic and ecological crises", we argue,

> *accumulation by restoration further ingrains the dominant 'exploit-deplete-mitigate' green growth paradigm, facilitating socially and ecologically destructive development through a spectacular high-stakes 'shell game' involving the spatial, temporal, and social displacement of both destruction and culpability (Huff and Brock, 2018).*

The restoration economy, I suggest, is driven by a political commitment to green growth and in response to the crises of growth generation and investment opportunities in the face of falling rates of return, new business risks and legitimacy crises. These risks are successfully converted into new profit opportunities (Soederberg, 2016) through the creation of conservation as a new asset class (Kay, 2018). This goes beyond the extension of "neoliberal conservation" (Büscher et

al., 2012) or the privatisation of environmental governance in that it fundamentally reshapes the governance of nature itself and reconfigures the roles of actors and arenas in which it takes place – visible in the role of (international) finance (IMF, pension funds, EIB, EBRD) and consultants (BBOP, Ecosystem Marketplace, private consultants). Accumulation by restoration relates to the rise in private conservation areas; the private ownership of land for the purpose of restoration and improvement of its ecological functions. They can be conceptualised as green grabs (Fairhead, Leach and Scoones, 2012), aimed to capture resources in the expectation of profits (Hall, Scoones, and Tsikata, 2015). These profits are generated through the sale of restored land as asset class to the land owner, as well as the generation of (carbon or biodiversity) offsets. Conservation finance profits can be generated through exploitation of price differentials between market prices for industrial lands (e.g. those used for agriculture, forestry) and ostensibly degraded, conservation-ready lands (Kay, 2018), in part through restoration work (such as establishing tree plantations) and rezoning tricks.

The underlying restoration ecology, the academic discipline that studies habitat restoration and recreation that forms the basis for offsetting through restoration, ecologists have warned, is still relatively young and "many of the expectations set by current offset policy for ecological restoration remain unsupported by evidence" (Maron et al., 2012: 142). The "ecological evidence base for restoration offsets [lend] little support that current theory and practice leads to a no net loss of biodiversity" (Curran, Hellweg and Beck, 2014: 630).

This business is closely related to the *offsetting industry* and especially the army of *environmental engineers* (consultants, ecologists and environmental economists) who make careers out of this new economy – and, of course, the development of new opportunities around 'green mining' (chapter five) or 'sustainable infrastructure' as outlined above. Particular interest has been shown by the construction sector, which also happens to be involved in many of the large-scale projects that require offsetting – or greening – to begin with. At the forefront of the restoration industry is construction machinery and equipment giant Caterpillar Inc. (introduced above), leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives, who claims to be a "champion of construction sustainability" (Stoikes, 2015) and recently hosted the first major national summit on infrastructure restoration. In their own words:

> *a fully integrated industry has yet to develop. In an attempt to catalyze the industry of natural infrastructure restoration – helping to move it from a strong concept to a sustainable business model – Caterpillar is convening diverse stakeholders for the Restoring Natural Infrastructure Summit in New York City (Caterpillar, 2015a).*

Caterpillar's vice president with responsibility for its Earthmoving Division has stated that "[w]e believe this could represent new opportunities for Caterpillar and our customers" (Caterpillar, 2015a). At the summit, Caterpillar joined co-panellists The Nature Conservancy, JPMorgan Chase and the US Army Corps of Engineers to show that "investing in nature is smart business" (Shayon, 2015).

The restoration economy further links the EU NNLi with increasingly prominent green infrastructure initiatives which are expected by the EC to serve as "catalyst[s] to economic growth" (EC, n.d.c) and the EC's aim to restore, by 2020, 15% of all degraded ecosystems, as laid out in the 2020 Biodiversity Strategy (EC, 2011a). Green infrastructure, according to the EC, constitutes

> *a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services [aiming to] improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity (EC, n.d.c).*

In the 2020 Roadmap to a Resource Efficient Europe, the EC was tasked to "[p]ut forward proposals to foster investments in natural capital, to seize the full growth and innovation potential of Green Infrastructure and the 'restoration economy'" (EC, 2011c: 12). In practice, it requires and promotes the monetary valuation of ecosystem services by calculating the cost differentials between green (natural) and grey (human-made) infrastructure developments.[34] Offsetting fits in all too well with this new agenda.

In this chapter, I situated the development of the EU NNLi in the European political economy of offsetting, extractivism, large-scale infrastructure developments, finance and resistance, to show how the initiative constitutes a *social technology of governance* to manage increasing difficulties to access land and finance for new large-scale development projects, intensifying resistance against these projects and the need to secure a social licence to operate. The initiative has helped strengthen the European offsetting governance framework and the *offsetting industry*; legitimising, and giving political weight to other offsetting efforts. The initiative shows that – similar to offsetting internationally – offsetting is fundamentally concerned with managing humans – most notably the conservation community, in this case – rather than managing nature; just as it is about securing against social risks (land, acceptance, finance) rather than material risk of the effects of biodiversity loss on corporate bottom lines. As a risk management tool – or risk insurance – NNLi legislation would further facilitate the

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[34] Green infrastructure developments are further supported with project funding through NCFF and under Horizon 2020, engaging civil society and researchers.

transformation of limits for the sake of competitiveness and capital accumulation, further hiding the destruction, exploitation and violence involved in industrial development.

In effect, the NNLi contributes to the further entrenchment of corporations into the European political economy, by allowing for the flexibilisation of limits and reducing the possibilities to challenge – legally, discursively, morally – corporate destruction and exploitation. It further naturalises the role that corporations have come to play in neoliberal conservation, establishing corporations as responsible corporate citizens and saviours of nature – themes that will be discussed in next chapter.

5. Green extractivism: a brief history of green mining and better coal

In today's political debate it may sound like misnomer to put coal and sustainability together ... but I can assure you ... [coal will continue to be a] vital energy and strategic resource, essential to the world's energy and security objectives ... and for a world where no one is left behind (Benjamin Sporton, director of the World Coal Association, Sustainable Coal forum, London, 31/10/2017).

Until two months ago I didn't associate coal with sustainability ... But coal has an important role to play (Steve Kenzie, Global Compact, Sustainable Coal forum, London, 31/10/2017)

The mining of metals, minerals and fossil fuels has been central to the consolidation of industrial civilisation, capitalism and state power (Malm, 2014, 2016; Lasslett, 2014). States are shaped fundamentally by the industry in mining-dependent countries (Shafer, 1994). Essential mining infrastructures such as electricity and transport are often (co-)financed by national or local governments, while many minerals and fossil fuels are central to key state interests, whether energy provision for economic growth or minerals for security interests, warfare and the exercise of state control (Ranta-Tyrkkö, 2014). At the same time, few industries are as socially and ecologically destructive as mining. Extractive operations continue to lead to the displacement of people and exploitation for cheap (slave) labour, as resources are being extracted with little or no regard for the social and ecological impacts on local communities or the global climate (Evans, Goodman and Lansbury, 2002; Madeley, 1999). Due to its nature as a "high-risk industry" (Evans, Goodman and Lansbury, 2002: 37) and its dependence on vast amounts of capital, access to land, and backing by international financial institutions, the industry is particularly vulnerable to public pressure. To ensure continued access to land and finance in the face of (increasing) resistance both in the global South and North, mining companies are in need of a 'social licence to operate' by mining-affected communities and support by state actors. In the last decades, I will show, biodiversity offsets have started to play an important role in gaining this licence to operate, and the legitimacy required by the industry.

In this chapter I explore the role of offsetting in the industry's efforts to present itself as 'green' or 'sustainable' in search of this legitimacy. I examine how the new paradigm of 'green mining' or 'sustainable mining' has become institutionalised through novel alliances, discourses and corporate technologies to pacify and silence opposition. I examine the specific mechanisms and underlying assumptions it relies upon. Biodiversity offsetting, I argue, has come to play the role of a *risk insurance mechanism* to deal with increasing risks to reputation, access to land, finance and, ultimately, profit, that mining companies are confronted with. Postcolonial scholars have developed the concept of extractivism, broadly defined as the "remov[al of] natural resources from their points of origin and dislocate[ion of] the emplaced benefits they provide" (Willow,

2016: 55), which, they argue, is itself a colonial ideology bound to state power (Acosta, 2013; Willow, 2016). I ask how offsetting – as one of a number of corporate strategies to co-opt, pacify and suppress resistance – has an impact on, or reconfigures, this corporate-state relationship. Within the self-proclaimed 'reinvention of mining' (e.g. KIN, 2015)[35], I argue, offsetting not only serves as an important mechanism to 'greenwash' and legitimise mining operations, but more importantly helps naturalise their activities and construct mining operators as saviours of nature, as indispensable parts of the global political economy and as good corporate citizens, while anchoring the new managerial logic of risk management. This chapter thus develops further the ideas and arguments introduced in chapter four that examines the way offsetting functions as a *social technology of governance* and constitutes an anchor for processes of participation and consensus-oriented stakeholder engagement. Even the World Bank recommends: "Effective stakeholder engagement is needed to help ensure the success of all types of development and conservation projects, including biodiversity offsets" (Ledec and Johnson, 2016: 21). It shows how these processes draw in conservation organisations and other (potential) critics to the ideology and practice of offsetting, while suppressing more fundamental critique and flexibilising the limits to allowable destruction (through development or extraction). In effect, I suggest, this contributes to the invisibilisation of the "slow violence" (Nixon, 2011, 2009) inherent in mining as well as the violence against those resisting mining operations across the world.

In chapter three I explored the role of the expansion of risk management ideas and audit culture in the development of offsetting, framed around the ability to hold corporations to account – through the magic bullets of transparency, accountability, and stakeholder dialogue. This discourse fits well with the new paradigm of consultation and consent, while ignoring the lack of power on the part of communities to actively shape or resist operational decisions through such channels. It is against this background that I situate the following history of 'green mining' and introduce 'Bettercoal', the supply chain management system pioneered by German energy company and coal producer, RWE. After providing some background to the increasing resistance the mining industry is facing across the world, I introduce the major industry initiatives set up to pioneer 'green mining' and 'sustainable coal'. This introduction is followed by an analysis of the place of offsetting in 'green extractivism', situated within the various mechanisms – novel alliances and partnerships – through which mining becomes 'green', and an exploration of the diversity of strategies to pacify and criminalise resistance against large-scale mining, lending legitimacy and credibility to the mining industry while facilitating land

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[35] See also this TEDx talk by a South African miner (Turton, 2013).

grabs and 'greenwashing'. The chapter will end with some concluding thoughts before I examine how these dynamics plays out in the German Rhineland in chapter six.

5.1. Extractivism, resistance and the state

Many of the worst environmental disasters and human rights violations in the past half century took place in the mining and petroleum industries (Warhurst, 2001). This has been well-documented in different places and contexts in the global South, where many of the world's largest and most important minerals and deposits are found, exploited by transnational corporations for consumption and shareholder profit in the North (e.g. Evans, Goodman and Lansbury, 2002; Rajak, 2011a; Lasslett, 2014; Kirsch, 2010). Historically, mining operations have contributed to increasing global economic inequalities, socio-ecological injustices and "unequal ecological exchange" (Hornborg, 1998), while cost–benefit language has often been (and continues to be) used to excuse the damage caused in one place, outweighed by the overall financial benefits to a region or country. Ecological and social degradation, displacement and coercion in the global South are thus framed as 'costs' for local and global development.

Similar environmental injustices can be observed *within* the global North, where indigenous groups, environmental justice movements, community groups and local initiatives have long been resisting the imposition of large mining operations. Multiple fault lines between communities and the state-mining complex, often structured along differences in class, gender and race, can be found across the world, as can be witnessed in the state of deprived villages in the UK, the US and elsewhere. Mining tends to take place in (politically and spatially) peripheral regions of the North, such as Eastern Europe and indigenous territories in Scandinavia. The spatial aspects of mining, Satu Ranta-Tyrkkö argues, are thus "intimately linked with the wielding of political and economic power" (2014: 107) and grounded in what Timothy Brennan calls "consciously chosen blindness … towards discursively and carefully obscured peripheries, [or] zones of invisibility" (2006: 101-112). The "politics of invisibility" (Ranta-Tyrkkö, 2014: 101) and "psychology of denial" (Nixon, 2011: 20) "actively produce … under- and unimagined communities, and [slow] violence – occurring gradually and out of sight – imposed by the world's *resource omnivores* upon those less privileged" (Ranta-Tyrkkö, 2014: 101).

In the last decades, large-scale mining (exploration and production) has expanded into some of the most remote and biodiverse areas of the earth, many of which have traditionally been occupied by indigenous peoples (Whiteman and Mamen, 2002; Rosenfeld Sweeting and Clark, 2000). This encroachment of the new resource frontier is driven by global mineral demand,

technological advances and liberalisation of mining laws through revisions of national mining codes and investment laws to incentivise investment into mineral 'development' – in combination with privatisation of land and resource extraction companies. International institutions such as the World Bank and the IMF are heavily subsidising the industry, particularly larger projects (Ranta-Tyrkkö, 2014), and supporting (foreign) private sector involvement in mining through structural reform programs and pushes for liberalisation (Whiteman and Mamen, 2002). In 1992, the World Bank started to push for the privatisation of mining companies with its "Strategy for African Mining" (World Bank, 1992).

Industrial development, frequently without real indigenous peoples' consultation or participation in decision-making (Whiteman and Mamen, 2002), also continues on indigenous lands in the global North, including North America, Australia and Northern Europe. It is not only in India that 'sustainable' mining operations contribute to the cultural genocide of indigenous populations (Padel and Das, 2010). In Sweden, for instance, indigenous Sami people are resisting the expansion of mining operations that make their traditional livelihoods impossible, while similar struggles can be observed in Finland (Ranta-Tyrkkö, 2014) and in North America (cf. Huseman and Short, 2012), among others.

Large-scale mining operations are not only frequently sites of gross human rights violations and ecological destruction, but also sites of resistance and contestation, labour struggles and movements for ecological justice, often led by indigenous communities and women's movements (Bell and Braun, 2010). As the analysis by the International Council on Mining and Metals (ICMM) illustrates (figure 16), mining-community conflicts have increased drastically in recent years, driven mainly by economic and environmental justice issues (Global Witness, 2015; Guardian, 2017). The number of killings of environmental and land defenders has risen steadily, with the mining industry constituting the "most deadly industry", the Guardian reports, based on figures by Global Witness (Guardian, 2017). Not only are these struggles intensifying, but they are increasingly transnationally linked, gaining support through the spread on social media, international solidarity campaigns (such as the London Mining Network, n.d.) and NGO advocacy. They come at great cost for corporations: the ICMM has estimated the "cost of conflict" of up to £24,507 per day per operation (Diez, 2016: 20).
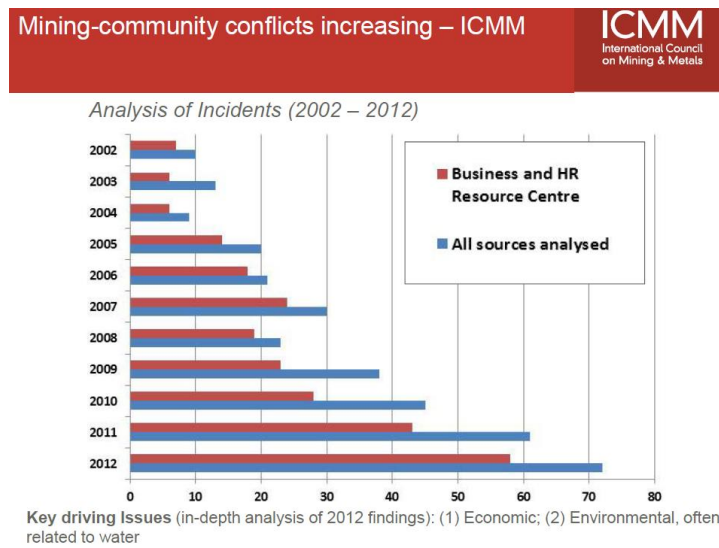
Figure 16 Mining conflicts from 2002-2012 (Diez, 2016: 5)

While often triggered by specific issues around local environmental pollution or public health, many revolve around fundamental questions of resource control, corporate power, alternative developmental pathways and democratic control. They may be fuelled by frustration with local or national resource governance, power inequalities and political action by state actors. While the state is integral to mining operations, as outlined above, it is also frequently contested in mining conflicts. Chris Ballard, for instance, explores how state claims to sovereignty are being challenged in the villages of the remote 'resource frontiers' in Asia-Pacific, Africa and South America, and claims to mineral ownership are challenged or denied (1997). The contestation is visible in this quote of a local landowner over mine development negotiations: "The developers are foreigners and the State is only a concept. It is us, the landowners, who represent real life and people" (Filer, 1996: 68).

This more fundamental challenge to state and corporate power is important to keep in mind when examining the way the industry has responded to increased opposition. In the face of PR damage caused by mining conflicts, threatening access to (cheap) land and finance, the mining industry's social licence to operate has become harder to establish. New barriers to entry, including requirements of Free Prior and Informed Consent, have forced the industry to invent new ways to legitimise their operations: to present mining as 'green' and 'sustainable'[36]. This response took a very specific form, conducive to the stated goals of NNL and NPI of mining operations, and led by a handful of transnational corporations, most notably British-Australian multinational Rio Tinto. Biodiversity offsetting became the key technology through which the

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[36] I use 'green mining' and 'sustainable mining' interchangeably in this chapter.

mining giant claims to have a NPI on the world's biodiversity, and operationalised to compensate for the impacts of its ecologically and socially disastrous ilmenite mine in southeast Madagascar (Mulligan, 1999; Seagle, 2012; Kill and Franchi, 2016), its copper mine in Mongolia (Tricario and Richter, 2017) and its Dampier Salt operations in Western Australia (Rio Tinto, 2012b), among others. Between 2001 and 2014, 32 major corporations have publicly committed to NPI or NNL policies, among them 13 leading mining/minerals companies (Rainey et al., 2015), a number that has further increased since then (interviewee).

5.2.   The birth of 'green mining' and 'better coal'

> *I don't see myself why mining can't be just as responsible as the tourism which we run in our national parks in the U.S., with all the roads and hiking trails and the campgrounds and facilities required for tourists. With mining, they could come into a conservation area for 20-30 years and leave an endowment; whereas with tourism, when do we get rid of these people and what do they leave behind? (Frank Vorhies, Senior Advisor for IUCN, in Hamrick, 2014).*

In 1997, on the initiative of Rio Tinto CEO Robert Wilson, Hugh Morgan from Western Mining Company and Doug Yearly from Phelps Dodge Corporation, the CEOs of nine major mining and minerals conglomerates – the crème de la crème in the mining business – met to discuss the new challenges their companies were faced with. Among them, in addition to the three CEOs above, were AAC, Anglo American, BHP Billiton, Freeport McMoRan and Newmont. They needed to respond to the intensifying resistance against large-scale mining projects around the world. Despite growing restrictions at home, transnational mining companies had been seeing significant mining expansion in the Global South in the 1990s, as new market economies were opening up in Eastern Europe, Latin America, Africa and Asia (Dashwood, 2012; Cohen, 1996). At the same time, international financial institutions imposed structural adjustment programmes onto indebted Southern countries that enforced the privatisation of state mining assets and liberalisation of mining laws to encourage foreign direct investment (Dashwood, 2012). Between 1985 and 1995, more than 35 countries changed or enacted their mining laws (Dashwood, 2012; Clark, 1997). With this came increasing exposure to public criticism: "The industry as a whole suffered from a bad image due to widely publicized mining accidents in the 1990s" (Dashwood, 2012: 79). Pressure from UNEP and some national governments increased, and the 1989 Basel Convention restricted the use of certain metals and minerals in consumer products, affecting mining companies' access to markets, particularly in Europe.

A number of prominent cases of resistance against, and legal challenges to, mining projects had further damaged the industry's reputation in the 1980s and 1990s. In Papua New Guinea (PNG),

indigenous resistance to Rio Tinto's subsidiary company Bougainville Copper Limited – including nonviolent civil disobedience and sabotage tactics – was violently suppressed by the PNG government and eventually turned into guerrilla warfare (involving the newly forming Bougainville Revolutionary Army) against the mine and the state (Lasslett, 2014). It sparked a civil war and counterinsurgency campaign by the PNG government and the mining company (with Australian military support and pro-state paramilitaries) that led to the loss of some 10,000 lives, state-executed torture, extrajudicial killings, internment, mass forced displacement and other forms of violence by the government (Lasslett, 2014). The Anglo-Australian multinational mining company BHP was met with Indigenous resistance triggered by the ecologically disastrous impacts of riverine disposal of tailings from the Papua New Guinean Ok Tedi mine in the 1980s and 1990s, leading to lengthy legal battles against the company and the PNG government that were finally settled with out-of-court compensation payments in the 2000s (Kirsch, 2010). The case (which took place in Australia, rather than PNG) constituted the first international lawsuit against a mining company and became an international cause celebre – triggering a wave of similar lawsuits against large mining operators in Indonesia, Bougainville, Solomon Islands, Nicaragua and elsewhere (Downing et al. 2002: 27). Chris Ballard and Glenn Banks (2003) consider these high-profile court cases 'tipping points' in the relationship of the industry with the public. In the Philippines, Rio Tinto invested into the Far South-East project of Lepanto Consolidated, but following resistance to their presence, and despite costly and time-intensive efforts to buy agreement and suppress dissent (including well-documented attempts to influence local decision making, misrepresent local opinion, e.g. through falsifying signatures, and questionable efforts to influence local opinion to serve company ends, e.g. through expensive hotel stays), were forced to withdraw from the project (Nettleton, 2001).

Public opinion of the sector had become particularly poor (Rae and Rouse, 2011) as its ecological legacy was ranging (and continues to range) from water pollution through acid-rock drainage, air pollution, smelting processes, toxic waste to earth displacement and habitat loss through open pit mining (Dashwood, 2012: 2; Miranda et al., 2003). Internationally, "media coverage and political focus applied to any mine 'accident' exceeds virtually all other industries" (Laurence, 2011: 282) and mines have increasingly been forced to close due to poor mine safety records (Laurence, 2011). Resistance movements have been linking up on both local and international levels – including international NGO campaigns, such as Oxfam's mining campaigns (e.g. Oxfam Australia, n.d.) – developing solidarity and political opportunities (Conde Puigmal, 2015; cf. Jenkins and Yakovleva, 2006). Local resistance has therewith often become more visible and posed a PR problem for corporations. At the same time, resistance has

triggered violent responses by police, military as well as paramilitary and private security forces enforcing corporate interests.

The trend continues today, with 2017 looking to become the deadliest for environmental activism – especially for those campaigning against mining – according to data by the UK watchdog Global Witness, published in partnership with the Guardian (Guardian, 2017). The employment opportunities that mining has traditionally offered have been increasingly curtailed with the automatisation of certain mining processes (Warhurst and Mitchell, 2000),[37] increasing discontent. In other words, the industry's PR departments were challenged to think of new ways to improve the sector's image.

Initial efforts to 'green' mining arose in response to these costly and time-intense legal battles and armed counterinsurgency measures, and attempts to prevent such levels of resistance in the future by ensuring a licence to operate through PR campaigns and local collaborations. In addition to the high financial and political costs associated with dealing with land conflicts such as the ones outlined above, the industry had been facing increasing difficulties to get access to new land and new concessions for their operations due to geological reasons such as increasing physical inaccessibility to new areas. With the institutionalisation of (indigenous) demands of Free Prior and Informed Consent into international policy and the increasing implementation of international human rights laws, companies were forced to adapt their business practices and change their corporate strategies – while able to turn these new challenges into ways to legitimise their operations. International and financial organisations were strengthening their lending conditions as part of their risk management strategies and in response to the adoption of international (inter-state) agreements. Despite their weaknesses, stakeholder consultations and engagement efforts take time and money – whether that actually ends up in local people's pockets or elites' accounts. The mining industry has thus been faced with increasing pressures to become, or at least to appear to become, more sustainable; to decrease their environmental footprint and to share their profits with local communities, to legitimise their operations and secure investments.

5.3. From the Global Mining Initiative to the Mines, Minerals and Sustainable Development initiative

At the Rio Earth Summit in 1992 corporate representatives successfully defeated a binding Code of Conduct for transnational corporations that had been drafted by the UN Centre for

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[37] In South Africa, for instance, continued liberalisation and foreign investment and the associated restructuring has led to drastic changes in corporate culture and reductions in job security (Minnitt, 2000).

Transnational Corporations through the Business Council for Sustainable Development (now WBCSD) and the International Chamber of Commerce. Following this victory, they became more pro-active and involved in the drafting of environmental governance in the 1990s. The emerging 'Sustainable Development' ideology, promoted by governmental, corporate and finance actors alike was vague enough to allow for a multiplicity of (often contradictory) interpretations and provided the background against which the aforementioned meeting of the nine mining CEOs took place in 1998. Following internal discussion, to improve their reputation and to pre-empt regulation, they launched what was to mark the beginning of the green mining paradigm – the Global Mining Initiative (GMI) – at the World Economic Forum in Davos in 1999, with start-up funds of approximately $4 million, provided by 28 companies (Phillips, 2006). The GMI was based at Rio Tinto's headquarters in London and was later to be institutionalised into the plan of action at the World Summit on Sustainable Development in 2002. Its aim was "to develop their industry's role in the transition to sustainable development and to ensure its long-term contribution to sustainable development" (BASD, n.d.). The motivation was clear:

> *[mining companies'] credibility had sunk to an all-time low. Opposition –*
> *specifically from communities on or around exploration and mining sites – had*
> *reached an all-time high. This had not only lengthened – sometimes to breaking*
> *point – the lead times between conceiving a project and constructing an actual*
> *mine. It had also contributed in the previous few years to a reduction in*
> *institutional funding for some projects and in particular for exploration*
> *(Nostromo Research, 2002).*

The GMI, it was announced, would "openly engage with environment groups, human rights groups and government" (in Moody, 2001). At the launch of the initiative, George Littlewood, consultant of a major Australian mining and fertiliser company, gave a speech in which he discussed the future of large-scale mining. He warned:

> *[m]ining critics see the [extractive] industry as having a declining role in sustainability… it*
> *has slipped behind. There are measurable consequences for this. It has literally lost*
> *ground for exploration or has found that the conditions for entry have become too*
> *onerous … market access for some minerals has been under great pressure (in*
> *Littlewood and Wells, 2000: 1).*

Out of the GMI grew the two-year Mines, Minerals and Sustainable Development (MMSD) research project and dialogue. Although presented as an NGO-initiative, it was proposed by Rio Tinto and Anglo American (and supported by Western Mining Corporation) after the setup of the GMI (Moody, 2001) – just in time for 2002 World Summit on Sustainable Development. Likely in anticipation of the scepticism and critiques that were to follow, then-Rio Tinto CEO Robert Wilson, later director of The Economist and driving force in this process (Bezanson, Rajaobalena and Gérin, 2016), asked the WBCSD to contract the London-based International

Institute for Environment and Development (IIED) as project initiator. The IIED, some argued, a research organisation without expertise in mining, could be relied on to act in Rio Tinto's interests – "or more accurately those of its chair Robert Wilson" (Nostromo Research, 2002). Already then, the Rio Tinto CEO was planning to make the Rio Tinto Madagascar mining project a "flagship project in sustainable development" (Bezanson, Rajaobalena and Gérin, 2016: 3). Robert Wilson had been outspoken about the need of the mining industry to deal with its critics; warning that the industry's traditional responses – "to say that criticisms are ill-founded, to remind critics that they depend on mineral products, and to engage in education, advertising and public relations campaigns" (Briskey et al. 2001) — had been failing as the sector's reputation continued to worsen. Stakeholder dialogue, he advocated, would be "the future" (Briskey et al. 2001).

Not only were CEOs confronted with increasing opposition and historically low mineral prices at this time, but they were worried that environmental NGOs were increasingly involved in decision making in international forums such as the Rio summit and recognised the danger of being "legislated out of business" (in Dashwood, 2012: 231-3). Through a series of forums (and at least one closed meeting with a few leading development agencies) in London and Australia, then-director Richard Sandbrook, co-founder of Friends of the Earth, and his colleagues of the IIED attempted to "get British NGOs on board" (Nostromo Research, 2002). According to MMSD documents, the project involved "over 5,000 participants from various stakeholder groups from all over the world" (Sethi, 2005: 63), while critics have pointed out that the forums were eventually "boycotted by almost every knowledgeable critic of the company" (Nostromo Research, 2002; see also Corpuz and Kennedy, 2001; Whitmore, 2006).

The leadership became concerned about the resistance of civil society movements, particularly indigenous groups, and responded with a policy paper on 'stakeholder engagement' (Moody, 2001). At the same time, by early 2001, nearly thirty mining companies had signed up to the GMI/MMSD,[38] as well as a couple of indigenous organisations, WWF and Conservation International. The final report and global conference of the same name, "Breaking New Ground: Mining, Minerals and Sustainable Development" (MMSD, 2002), mainly focussed questions of responsibility for cleaning up mining waste and was, once again, boycotted by most indigenous peoples' organisations, mining NGOs and mine-affected communities (Whitmore, 2006). It was criticised as glossing over many critical issues (Nostromo Research, 2002) and as mere PR

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[38] They include: Acan, Alcoa, Anglo-American (AAC), Barrick Gold, BHP, Billiton, Codelco (Chile), De Beers, EDM/Somincor (Portugal), Freeport Mc-Moran, Gold Fields Ltd, Lonmin, MIM (Mount Isa Mines), Noranda, Mitsubishi Materials/Mitsubishi Corporation, Mitsui Mining and Smelting, Newmont, Nippon Mining and Metals Norsk Hydro, North Ltd. (taken over by Rio Tinto in 2000), Phelps Dodge, Placer Dome, Rio TInto, Sibirksy Alumininum, Sumitomo Metal Mining, and Western Mining Corp (WMC).

exercise (Dashwood, 2012). The processs itself was critiqued for being framed as inclusive and consultative although its objectives, framework and structure had all been "unilaterally predetermined by the corporate sector" (Whitmore, 2006: 310).

Simultaneously, companies increasingly invested in private consultancy services and PR services to improve their image, such as KPMG or the London-based Control Risks Group. The latter, founded in 1975, added a new "investigative division" in 1995 to promote the concept of 'corporate accommodations' to corporate critics and to offer advice on "how to change aspects of their operations [e.g. to 'green' mining] without essentially altering their corporate culture or programmes" (Moody, 2001). Under the slogan of "Managing risk – maximising opportunity" the firm describes itself as a "global risk consultancy specialising in helping organisations manage political, integrity and security risks in complex and hostile environments … handling sensitive political issues and providing practical on-the-ground protection and support" (CRG, n.d.).

According to Eveline Lubbers, the group constitutes an "institutionalized old boys circuit", involving former high-rank police officers and ex-CEOs from transnational corporations (2000). In their unusual 1997 report "No hiding place: Business and the Politics of Pressure" (CRG, 1997), the consultancy advises corporations how to gain a licence to operate in the face of increasing scrutiny of environmental and social behaviour. The practices involve undercover espionage of environmental activists and indigenous groups (personal communication), particularly involved in the energy and mining sectors, as well as the monitoring of resistance groups (Lubbers, 2002). It had been realised, as intelligence expert Roy Godson rightly predicted, that "manipulating NGOs would become one of the most effective means for companies to destabilize rivals and adversaries in the future" (in Lubbers, 2002). The consultancy has been criticised for being "closely associated" with "individuals and agencies involved in supplying mercenary assistance to governments and mining companies" (Moody, 2001). The CRG collaborated with the MMSD and co-hosted a conference on corporate social responsibility issues in London in 2001 (Moody, 2001).

Other actors who have been important to the credibility of 'green mining' are academics and church groups. Social scientists, especially anthropologists, have long been working as consultants, mediators or "brokers" for mining companies (e.g. Ballard and Banks, 2003). Most notable is maybe the Kellogg Innovation Centre (KIN) of the US-American Kellogg School of Management, one of the most highly ranked (and expensive) business schools in the world. The KIN was founded in 2003 by business leaders and academics and is advertised as "a unique

network of networks, one that crosses sectors— business, government, non-profit, arts, sciences, academia, defence—and literally spans the globe" (KIN, n.d.). The KIN Catalyst for the Mining Company of the Future, co-chaired by the Anglo American Chief Executive Mark Cutifani and KIN senior fellow Peter Bryant, aims to "recast the mining business model as a development partnership, working with stakeholders rather than at odds with them to pursue shared goals of prosperity" (KIN, n.d.). In 2011, KIN organised a five-day international conference on the challenges of the mining industry, with mining corporations, NGOs and indigenous groups, investors, researchers, and governments. The conference was financed by Anglo American, Caterpillar, AngloGold Ashanti, General Electric and other companies.[39] The meeting initiated close dialogue with the Vatican, including a series of 'Days of Reflection' held at the Vatican, and similar dialogues with other church leaders (such as the Church of England and the Methodist Church) that are now happening across the world (KIN, n.d.).

Individual social and natural scientists have also been involved in green mining. Presenting the findings of the EU-funded 'Flexible and Mobile Economic Processing Technologies' project, for instance, Anders Sand and colleagues showcase how to build social acceptance of the mining industry in the Nordic/European context (Sand et al., 2016). Strategies include "community involvement initiatives" (including a music festival inside a Finnish open pit mine), sponsorship of a Swedish basketball team, "trust-building exercises" with Swedish Sami communities, and open-door days for children in a Finnish gold mine (Sand et al., 2016). They warn their corporate audience that negative attitudes towards mining should be attributed to "fear, overestimating risks and impacts, or past negative experiences", before admitting that they "can, however, also be legitimate" (Sand et al., 2016: 20). To increase acceptance, they recommend changes in educational mining *degrees*: the "modification of technical education" to include "communication skills (e.g. negotiation), social and environmental aspects" as well as lifelong learning initiatives involving 'soft skills' for mining professionals (Sand et al., 2016: 22). The role of academia, they advocate, should be facilitating stakeholder dialogue meetings – in other words lending their legitimacy to support mining vis-à-vis resistance (Sand et al., 2016).

International financial institutions such as the World Bank and the EC have been supporting such academic involvement in green mining. The EC advocates for 'greening mining' to ensure raw material provision for competitiveness as well as the legitimacy of electricity provision (energy union) and its special role in the single European market (chapter four). The DG Growth (Internal market, Industry, Entrepreneurship and SMEs) finances a sustainable mining research

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[39] The advisory council includes, interestingly, Melissa Rowe, vice president of RAND corporation and Reverend Séamus Finn from the Interfaith Center on Corporate Responsibility, among others.

project (EC, n.d.d) as part of the European Innovation Partnership on Raw Materials. The OECD's International Energy Agency, together with the Coal Industry Advisory Board, has collected "Case Studies in Sustainable Development in the Coal Industry" (OECD/IEA and COAB, 2006), and the British Department for International Development and the German Development Agency (with partners) set up a Sustainable Mining project targeting Chinese mining investments (EMM, 2016).

5.4.   Offsetting mining impacts – introducing the offsetting-extraction nexus

Large conservation organisations had become increasingly enthusiastic about green mining and offsetting. In 2000, Conservation International published its "Guide to Responsible Large-scale Mining" in which offsetting was recommended to increase "the overall conservation benefits" of mining (Rosenfeld Sweeting and Clark, 2000). In 2003, IUCN and ICMM organised a joint workshop at the IUCN headquarters in Switzerland entitled "Mining, Protected Areas and Biodiversity Conservation: Searching and Pursuing Best Practice and Reporting in the Mining Industry". Participants – among them Kerry ten Kate, and high-level representatives of Rio Tinto, Conservation International, Flora and Fauna International and IUCN – agreed "to explore the use of biodiversity offsets in recognition that there may be a point at which investment in biodiversity off sets provides greater social, environmental and economic benefits than trying to mitigate all impacts" (ICMM, 2005: 2; Benabou, 2014: 105).[40]

A year later, Earthworks and Oxfam launched their "No Dirty Gold" campaign which involved a critical report against the mining industry, "Dirty Metals: Mining, Communities and the Environment" (2004). The campaign, Sarah Benabou argues, triggered

> *a coordinated response on several fronts. On the one hand, the ICMM immediately responded by insisting on the fact that this report failed to take into account its commitments made during the MMSD process ... On the other hand, Kerry ten Kate undertook a series of interviews with major industrial players to clarify the concept of biodiversity off sets and make it relevant for business (2014: 105-6).*

The same year saw the foundation of BBOP and the publication of Kerry ten Kate, Josh Bishop and Ricardo Bayon's report on the "business case" for offsets (2004). At the 2004 IUCN World Conservation Congress in Bangkok, Rio Tinto representatives ceremonially announced their collaboration with IUCN with the aim to have a NPI on biodiversity (Turner, 2014). Other NGOs that embraced offsets included WWF and Care International – "much to the frustration of mine-affected communities" (Whitmore, 2006: 310). Simultaneously, the mining industry, supported

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[40] In the same year, the oil and gas sector started exploring the use of biodiversity offsets through the Energy and Biodiversity Initiative (EBI, 2003; Benabou, 2014).

by international financial institutions, continued to promote sustainable mining as part of the liberalisation of national mining codes, such as the National Minerals Policy in the Philippines (Whitmore, 2006).

NGOs, partnerships and offsetting

More mining-conservation partnerships around offsetting were established, as conservation organisations started to engage with business: Flora and Fauna International set up partnerships with Anglo-American, eni and Rio Tinto; Earthwatch Institute initiated a partnership with Rio Tinto; Conservation International began engaging with the mining sector in 2000 through their Centre for Environmental Leadership and Business and collaborated with at least 11 different mining companies in 14 countries in the following ten years (Smuts, 2010). In 2014, 70% of ICMM members reported to have biodiversity partnerships in place (IUCN and ICMM, 2014: 3) – many with large conservation or development organisations (such as WWF or Oxfam America), faith organisations (especially the Catholic Church) and international financial institutions. Some of these partnerships are also financially supported by the EC through the Business and Biodiversity Campaign (financed with LIFE funding money).

The role of conservation organisations is to grant the project credibility and legitimacy, to contribute ecological expertise, to lend the offsetting project the image of a credible scientific process and to select 'offset currencies' and 'offset ratios'. They further bring in the metrics and measurements that form part of environmental impact assessments and help to quantify mining impacts. As Mehrhad Nazari, environmental consultant at Prizma LLC, and Don Proebstel of Gold Reserve Inc. describe:

> *NGOs can assist in assessing and validating baselines and benchmarks, selecting appropriate "offset currency" and indicators (hectares, trees or frogs?), identifying eligible components in view of the project specific context (planting trees, capacity building or trading-up to higher biodiversity priorities?) and use of multipliers (two trees planted for each tree removed?) (2009: 43).*

Companies rely on the credibility and legitimacy of these organisations: "Without the involvement of legitimate NGOs, most BDO [Biodiversity Offsetting] concepts may not gain credibility and would not be able to contribute to a social license" (Nazari and Proebstel, 2009: 43). Conservation organisations further deliver the tools needed for the surveillance and monitoring of areas and local populations who are excluded from the areas, potentially contributing to their criminalisation and the militarisation of conservation areas (Duffy, 2016; Büscher and Ramutsindela, 2016). In addition, these partnerships help neutralise critique and create divisions in the environmental movement, triggering protest from grassroot

organisations who often oppose these partnerships (Brock and Dunlap, 2017, chapter six). Andy Whitmore from the Mines and Communities Network has warned that the industry may be

> *using bodies of engagement, such as the MMSD, to seek out northern – often environmental – NGOs that it feels it can work with. This tactic is frequently used to isolate those who are critical of mining, but the worst part of the situation is that these organisations are then taken to represent 'civil society' positions on mining and therefore, to speak on behalf of communities who have never endorsed such an arrangement. Understanding and dealing with the different groups within 'civil society', and as a result dealing directly with affected communities, is essential to establishing real trust (2006: 313).*

Church groups and academic institutions also lend legitimacy and "symbolic capital" (Kirsch, 2014: 181). Jutta Kill and Giulia Franchi's case study of Rio Tinto's Madagascar offsetting project illustrates this: following a community meeting to discuss the offsetting activities that was described as 'fiasco' by participants, the next meeting was arranged (by collaborating NGO representatives) to take place in the local church, to start with a church service followed by discussion of the offset project (2016). The aim was to "avoid disruption", based on the expectation "that people would remain calmer in a church" (Kill and Franchi, 2016: 14).

In 2001, the GMI and MMSD had founded the International Council on Mining and Metals (ICMM) to improve the social and environmental performance of the industry, bringing together 23 mining and metals companies and 30 regional and commodities associations. The council, which claims to "serve as a catalyst for change; enhancing mining's contribution to society" (ICMM, 2017), drew up the ICMM Sustainable Development Framework, a voluntary and widely criticised[41] initiative. The initiative is based on ten principles derived from industry-led standards, and was adopted in May 2003. ICMM members are obliged to report their performance in accordance with Global Reporting Initiative (GRI) guidelines. In collaboration with the ICMM, the GRI has developed a mining-specific standard for sustainability reporting: the GRI Mining and Metals Sector Supplement (piloted in 2005).

At the 2002 World Summit on Sustainable Development, IUCN and ICMM launched a controversial partnership that further institutionalised offsetting as part of 'green mining' – but was quickly re-framed as IUCN-ICMM *Dialogue* following protest by IUCN members, environmental and social NGOs, and indigenous peoples' groups (Canadian Network for Corporate Accountability, 2006). Its aim was to establish 'Good Practice Guidance for Mining and Biodiversity' as well as biodiversity 'reporting criteria'. They wrote an "[i]ndependent report on biodiversity offsets" (2013) and commissioned a 'biodiversity performance review', prepared

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[41] See for instance CNCA (2006).

by environmental consultants of Global Balance and The Biodiversity Consultancy (IUCN and ICMM, 2014), drawing from Insight Investment's biodiversity benchmark, Fauna & Flora International's Natural Value Initiative and the Mining Association of Canada's 'Towards Sustainable Mining Initiative'. Although increasingly hidden in glossy brochures and project descriptions, biodiversity offsets form the very foundation of these partnerships, as the final but crucial element for any biodiversity strategy and mitigation hierarchy.

By 2002, sustainable mining had made it into the post-Johannesburg Plan of Implementation of the World Summit on Sustainable Development (UN, 2002), which also saw the launch of EITI, the self-proclaimed "global standard for the good governance of oil, gas and mineral resources" (EITI, n.d.). The initiative is supposed to "help citizens of resource-rich developing countries hold their governments accountable for the management of revenues from the oil, gas and mining industries" (Jenkins and Yakovleva, 2006; PWYP, n.d), focusing on issues of corruption and so-called 'good governance' to respond to increasing evidence of the destructive social and ecological impacts of these operations. Signatories include the very same corporations profiting from this exploitation, such as Anglo American, Rio Tinto and Newmont.

In July 2005, following internal debates and discussions with members, the ICMM published a proposition paper and a briefing paper on biodiversity offsets (ICMM, 2005a, 2005b) thatclearly display the influence of – and cross-reference – Kerry ten Kate, IUCN, Fauna & Flora International and Rio Tinto's work (ten Kate, Bishop and Bayon, 2004). The two papers re-position the industry as central not only to tackling biodiversity loss but also to poverty alleviation, electricity, water, housing and transport provision as well as equitable development. Offsets, particularly the rehabilitation of brownfield sites, were to make the industry biodiversity-neutral and compensate for its negative biodiversity impacts (ICMM, 2005a, 2005b).

The close relationship between these initiatives and BBOP is not just grounded in personal connections, and particularly the role of Kerry ten Kate; the mining industry continues to play a structurally important role in BBOP. Until 2016, its Executive Committee was chaired by Sophie le Pennec, director of the Environment Group of French mining corporation ERAMET, and five of the ten corporate members of the BBOP Advisory Group belong to the mining sector. BBOP has published a document entitled "Offsetting Environmental Impacts to *Facilitate* Mining" (Fish, Snashall and Streater, n.d., emphasis added), and many of the case studies and pilot projects that are so important for the development and reproduction of the *offsetting industry* involve mining companies. At the same time, biodiversity offsetting has become a central

mechanism in the repositioning of the transnational mining industry to manage reputational and regulatory risks. Through implementation on the ground and institutionalisation into organisational structures, offsetting has come to constitute an important tool for the industry to achieve this 'sustainability'; to manage the 'risk' of resistance and legislative changes, to ensure continued capital accumulation through investments, and to secure investors' confidence.

Beyond partnerships: dialogue through offsets, making risks legible and redefining sustainability

Beyond their role as mobilisers of corporate conservation partnerships and other novel alliances, offsetting projects act as anchors for processes of participation, stakeholder engagement and dialogue. It is by means of discussions of offsetting initiatives (sometimes presented as 'mere' conservation activities to communities) that 'stakeholders' are brought together in community meetings (Kill and Franchi, 2016), but also in international offsetting conferences and corporate conservation conventions, such as the RWE recultivation conference. They thus fulfil a second important function: to make the risks associated with resistance (or "stakeholder expectations") legible and to generate data to materialise these risks. The resulting environmental performance data is then communicated and further analysed, legitimised and materialised by a new industry of professionals surrounding the offsetting practice – including the corporate-financed GRI and the CDP (formerly Carbon Disclosure Project). The third function lies in generating or anchoring other forms of PR and outreach, enabling the industry to position itself at the forefront of sustainability and to contribute to the capturing of imaginations of a (better) future – effectively helping to enrol, co-opt and divide-and-conquer the conservation community and local populations (as explored in chapter six).

Making mining 'sustainable' has required a re-definition and further watering down of the concept of sustainability, positioning mining as a "development industry", and reducing sustainability to a simple promise to "co-inspire, co-collaborate, co-innovate and co-educate" (KIN, 2015: 1-2). Through these discursive moves, 'sustainability' becomes depoliticised as technological innovation and redefined as long-term socioeconomic responsibility and profit opportunity that exceeds the duration of the mine, with depletion compensated by long-lasting wealth generation (Jenkins and Yakovleva, 2006). Indeed, the very idea of sustainability has come to be employed as 'mobilising device', or what Bonnie Urciuoli (in conversation with Michael Silverstein) calls a "strategically deployable shifter" (2003: 396). This is visible in the important role of offsetting initiatives in corporate CSR reporting, where mining companies play a leading role, frequently winning reporting awards and receiving praise for their reporting

standards (Rajak, 2011a). Already in the early 2000s, a survey by KPMG showed that the mining industry was moving towards a 'leadership position' in the disclosure industry (2002), and in 2013 companies continued to deliver what KPMG call the "highest quality CR reports" (2013: 13). Given the intense levels of resistance against many mining projects, it comes as no surprise that the mining and metals sectors score highest for "identifying key stakeholders" in their reporting (KPMG, 2013: 17). These (voluntary) reporting commitments have been analysed as "declaratory diplomacy" (Newell, 2000: 33) and serve to pre-empt the launch of specialist biodiversity metrics by major stock market indices to inform their investors about investment exposure to 'biodiversity related risks' (Rayment and McNeil, 2014).

In addition to CSR disclosure awards, the industry has been praised for their green mining efforts. Following the establishment of the offsetting project for its ilmenite mine in Madagascar as part of its then-recent NPI policy (Seagle, 2012; Kill and Franchi, 2016), Rio Tinto's QIT Madagascar Minerals (QMM) received the Nedbank Capital Green Mining Award in 2009 (Prinsloo, 2009). The well-studied project has been criticised not only for failing to fulfil the NPI objective (Virah-Sawmy, 2014), but also for resulting in a double-landgrab from local communities (Kill and Franchi, 2016). The Green Mining award, itself another example of spectacle in service of corporate interests, is meant to honour "significant effort[s] in terms of protecting or improving the biophysical environment in which [a company] operates" (Prinsloo, 2009). In 'Mining Weekly', QMM's work is described as "building capacity for better use of the natural resources in Madagascar" and as effecting "long reaching and positive effects for society" (Prinsloo, 2009). "Active engagement with local, national and international stakeholders", QMM's representative is cited, "has been fundamental to the success of the project". What is not mentioned in the piece are the company's deliberate lies to communities about the offsetting project and its refusal to take seriously the concerns of local communities, as documented in detail by Jutta Kill and Giulia Franch (2016). Instead, sustainability is reframed – or performed – as extensive engagement with aid agencies and international institutions for capacity building and environmental protection programmes, in addition to the supposed NPI on the country's biodiversity; establishing the company at the forefront of the sustainability frontier.

5.5. Green mining of cleaner coal?

In addition to these GMI/MMSD process and individual projects, green mining has been institutionalised in a number of sector- or regionally specific initiatives (such as the Canadian project 'Towards Sustainable Mining'). In this section, I will focus on European initiatives, and

particularly the Bettercoal initiative. While most recent mining expansion has taken place in Latin America, Africa and Asia, many mine operators are European(-listed) companies, and have been at the forefront of 'green mining'. New large mining operations have become scarce in Europe, but recently proposed new projects (such as Nant Llesg) or proposed project expansion plans (Ffos-y-fran, both in Wales) have incorporated offsetting into project applications. Other mining projects (such as RWE's coal mines) are already being offset. Noteworthy in the coal sector are the US American 'cleancoal' marketing campaign – popularised in 2008 under threat of climate change regulation – and the international 'Bettercoal' initiative. The latter, an international initiative that is meant to 'green' the international anthracite coal supply chain is of particular interest in this research, as it was founded and led by German coal mine operator and electricity provider RWE, whose offsetting activities will be analysed in the next chapter. The initiative has incorporated offsetting into its code of conduct.

Whereas some scholarly attention has been paid to the relationship between minerals mining and biodiversity offsetting (Sullivan, 2013b; Seagle, 2012; Kill and Franchi, 2016), and particularly the development of "green uranium" (Sullivan et al., 2016), the relationship between coal mining and biodiversity offsetting remains under-researched, with the noteworthy exception of Helen Tregidga's analysis of the biodiversity offsetting practices of Solid Energy, a state-owned coal-mining company in New Zealand (2013). Yet, many – particularly opencast coal mine operators – have increasingly started to offset, while others have engaged in compensation for decades. In Australia and New Zealand, offsetting is legally required and frequently criticised; in Australia, the cabinet's decision to allow for post-mine closure tree planting – as part of the rehabilitation of the site – to count as offsetting, triggered strong opposition from its own environmental department as well as the public (Hannam, 2016). The incident illustrates the use of offsetting to facilitate coal mining, which continues to hold strategic importance to many governments.

The coal industry is interesting for a number of reasons. Few industries are as hard to 'green' as the coal industry, due to its contribution to climate change and the irreversible ecological damage that coal mining – particularly opencast – causes. Particularly in Germany, Europe's coal champion, the industry has proven particularly immune to climate change and environmental legislation, and employs an extraordinarily strong lobby (chapter six). At the same time, resistance against coal mining has been growing, with a diversity of actions taken against mines and power station intensifying. In May 2016, as part of the global campaign 'Break Free from Fossil Fuels', an estimated 30,000 people practised civil disobedience and direct action against

coal mines, risking arrest, to interrupt mining. Images and videos of these actions were watched and shared by hundreds of thousands of people, triggering renewed debate around coal.

The industry has had to respond to the increasing NGO pressure as well as associated risks of stricter legislation and legal action against companies (interviewees; Löchte, 2013). In response to, and in expectation of, the anticipated increase of coal import for European electricity production and associated regulatory and reputational risks – in other words, to neutralise critique before it could negatively affect the corporations' bottom lines – Europe's largest coal importers, under RWE leadership, set up the Bettercoal initiative. The initiative claims to tackle supply chain issues related to the import of coal. Founding members, apart from RWE, include DONG Energy, EDF, Enel, E.ON, GDF SUEZ and Vattenfall. Since the foundation of the initiative, Fortum, Gas Natural Fenosa, Drax Power, EDP and Iberdrola have joined. As a senior representative of the initiative explains to me: "The buyers understood a) that they were going to be asked questions about their supply chain, and b) they were going to be asked to account for it". In collaboration with consultants and NGOs, they set up the initiative and started working on a 'code of conduct', an 'assessment toolkit' as well as a 'guidelines' document.

The initiative was formed in 2010 and registered as 'non-profit' in 2012. It grew out of the 'Dutch coal dialogue', a "true" stakeholder dialogue that was achieving "real progress on transparency in the coal supply chain", I was told by one interviewee who was involved in the dialogue. "Bettercoal killed the dialogue", the campaigner explains. The initiative states to aim for "continuous improvement of corporate social responsibility, including social, environmental, and ethical practices, in the coal supply chain" (Bettercoal, 2013), to be achieved through engagement with stakeholders and mine operators to develop guidance on, and implement, responsible mining. 'Bettercoal tools' are meant to help companies "to improve good practices to protect workers, local communities and the environment from the potential negative impact of coal mining", and follow-up of progress and reports are meant to be part of the continuous improvement objective (Bettercoal, 2013). Mine operators are asked to perform self-assessments and accept independent site-assessments by third party assessors (chosen by Bettercoal) at the mine level, the results of which stay confidential. Members are meant to incorporate the results of the assessments into their due diligence processes and as a result be able to make better informed coal purchasing decisions. Underlying is the idea to take responsibility over the coal supply chain – improving practice through stakeholder engagement and the adoption of standards – to strengthen their licence to operate and construct an imagine as 'responsible companies'. For this purpose, the initiative represented itself as a "multi-stakeholder initiative" early on, involving, among others, Fauna and Flora International –

involved in (controversial) partnerships with Rio Tinto, BP, ChevronTexaco, Shell and others – in their Stakeholder advisory group[42] and consulting with social justice and environmental groups during the setup of the initiative "to increase credibility", as one research participant tells me. The first and the current chairs of the initiative's board of directors are both from RWE.

Making the coal supply chain 'sustainable' involves a number of managerial strategies including assessments, identification of good practice, standard setting, 'independent' certification, audits, stakeholder engagement as well as the requirement to offset, laid out in a number of guidance documents including the 'Bettercoal Code Assessment Guidelines'; the 'Bettercoal Code Self-Assessment' and the 'Bettercoal Code Assessment Procedures'. The code involves a number of principles, including compliance with national and international law, and requires companies to contribute to sustainable development and to "integrate practices that protect and support Biodiversity and Ecosystem Services impacted by their operations, throughout the life cycle of the mine" (Bettercoal, 2013: 5). Its original Code already required biodiversity impact assessments and compliance with the mitigation hierarchy, including offsets, reinforced by more recent requirements to comply with IFC performance standards.

The initiative has been criticised for allowing mining in national parks and other protected areas, as long as it involves offsetting (ActionAid et al., 2014). In addition, critics argue, while the initiative presents itself as a multi-stakeholder initiative, e.g. by including a representative from a labour union and a large conservation NGO on their advisory board, it is clearly "designed *by* and *for* energy companies" (ActionAid et al., 2014, emphasis added). A minority of members of the "Technical & Advisory Committee" consists of non-industry "experts", but the decision making structure is composed solely of industry representatives. Whereas the initiative claims to "take responsibility" (Löchte, 2013), its members and their suppliers cannot actually be held accountable for failing to address human rights violations and ecological disasters that have occurred in their mines (ActionAid et al., 2014). Two of RWE's suppliers, for instance, are the infamous Columbian Cerrajón mine, established on indigenous land and leading to the displacement of the Wayüu nomad people (Lennox, 2012; Gedicks, 2003), and Drummond mine that made headlines for the murder of trade union activists (Rosser, 2015). The language of audits, accountability and responsibility hides the lack of decision making power of communities affected by coal mining – whereas corporations are required to 'consult' communities, the consultation does not need to be taken into account in corporate decision making. While this

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[42] Others include: Rio Tinto's Principal Advisor on coal; the senior vice president of 'Equitable Origin', an oil production site certification scheme; a senior advisor at the social justice organisation IKV Pax Christi; the Environment, Health and Safety Committee Lead at Glencore; a university lecturer; the Health, Safety and Sustainability Officer at IndustriALL Global Union; and the General Manager, Sustainable Development at Xstrata Coal.

language of accountability and transparency is persuasive, it covers up that Bettercoal neither actually reports – internally or externally – on its members' purchasing decisions (ActionAid et al., 2014), nor publicly on their performance, one campaigner explains. The audits and self-assessments are criticised as "absolutely insufficient" by another research participant, while the institutionalisation of community engagement aims to co-opt protest.

In line with other green mining initiatives, Bettercoal serves as an illustrative example of how bad media attention is being managed, as Joachim Löchte states openly (2013). The initiative helps improve credibility and ensure that no legal action is taken against European companies, while having become a benchmark for auditing without being held accountable, grounded in discourses of transparency and responsibility. Yet, for civil society actors, tracing where coal is sourced continues to be impossible (ActionAid et al., 2014). Bad practice is framed according to the 'bad apple principle', and a number of technocratic solutions are presented to deal with these bad apples. "Risks are stage-managed", a corporate research participant explains to me, where "credibility and transparency" matter. For RWE, who continue to play the leading role in the initiative, Bettercoal thus serves to outsource critique – through constant referral to the initiative vis-à-vis critics – and deflects from their own responsibility and role in environmental and social degradation. The "forward looking approach" of "continuous improvement" that defines the initiative helps invisibilise past ecological and social destruction and violence. In the spirit of 'green mining', the initiative thus serves to keep NGOs "at arm's length", a campaigner describes, to prevent substantive changes to their operations and to "greenwash" the industry (Ganswindt, Rötters and Schücking, 2013).

5.6.   Conclusion

In recent decades, Peter Benson argues, "multinational corporations have strategically turned to a language of social responsibility and civic virtue to legitimize corporate activities with negative human and environmental consequences" (2012: 56; see also Rajak, 2011a), using idioms of ethics, health, environmentalism and corporate responsibilities. This involves the use and construction of "corporate oxymorons" which "conceal the harm caused by corporations to people and environments [and form part of] a larger set of strategies used by corporations to manage or neutralize critique" (Benson and Kirsch, 2010: 45). Green mining is an illustrative example of this process, involving a diversity of strategies – from the adoption of audit culture to offsetting – to manage critique. What is crucial to understand, however, is the way the industry's conservation activities and sustainability discourses 'speak to each other' (cf. Seagle, 2012). Green mining could only become reality because the ideologically compelling narrative

was complemented by corporate practices to feed into the narrative, including offsetting (which itself depends on compelling discourses and 'spectacle'). These discursive articulations are manifest in CSR reports and case study presentations, glossy brochures and CSR awards. These practices and discourses represent an important change in the way corporations now rely on a variety of strategies and novel imaginaries (Brock and Dunlap, 2017) to deal with, and to neutralise, critique and resistance both on the ground and through increasingly transnationalised civil society campaigns. These strategies depend on good PR consultants, the willingness of conservation organisations, academics, and civil society organisations to collaborate, and therewith legitimise their practices, and the implicit or explicit engagement and support of government actors. In addition to lending legitimacy and credibility to these operations – entrenching their corporate role as good corporate citizens of legitimate states – this contributes to the re-shaping of biodiversity governance.

Although the powerful role and private authority exercised by transnational mining corporations through initiatives such as the GMI, the ICME, the ICMM or the Bettercoal initiative is undeniable (Dashwood, 2012: 7), that is maybe not the most interesting effect of green mining and the institutionalisation of offsetting in the (now green) mining industry. More importantly, it is crucial to examine how they converge with state interests, and how these strategies are mobilised to control, suppress resistance, and ensure the smooth accumulation of capital and consolidation of state and corporate power (as will be explored in the case study in chapter six). In addition, the wider effects of these processes deserve attention. This private institutionalisation and pushing of offsetting has had consequences beyond corporate business operations and management. Mining companies, led by Rio Tinto, have been among the most active participants in BBOP as well as the European Biodiversity and Business platform, and in their development of standards and guidelines that influence EU policy makers and financial institutions. Offsetting initiatives by private actors have contributed to a wider transformation of biodiversity governance – visible in the ongoing struggle inside the EC – where corporate interests became ever more institutionalised and where more substantial mandatory legislative requirements or regulations is pre-empted. Cecile Bidaud and colleagues argue that "[e]arly adoption and proactive participation in these [offsetting] initiatives provides companies with the opportunity to influence international policy processes and provide technical guidance in this rapidly evolving field" (Bidaud, Hrabanski and Meral, 2015: 181). The key word here is 'technical guidance', which hides the very political assumptions and decisions behind it. The Biodiversity Consultancy, which provides guidance and advice on offsetting to companies, is rather blunt about these opportunities; in its overview of the opportunities of offsetting for

corporations it recommends the "*[c]onversion of offsets into flagship environmental and social projects* within an overall corporate biodiversity strategy that aims to enhance the social licence to operate and goes beyond legislative requirements to demonstrate a company's values" and promotes "*[c]ompetitive advantage* through custom-built offsets and the potential to inform or even shape government guidance, if clear policies do not exist" (TBC, 2014, emphasis in original).

"The production and reproduction of structural violence", Susanne Soederberg (as many others) has argued, is "inherent to accumulation. The role of capitalist states through their various modes of governance is to (continually) attempt to depoliticise and manage this violence" (2016: 1). In few industries is this violence as visible as in mining. Whereas to contain this violence, these managerial technologies have come to be framed in the language of markets; emphasising a separation between social and economic phenomena, individualising blame and responsibility (assigning it to particular corporations, for instance) and appealing to 'rational behaviour' (Soederberg, 2016), I hope to have shown how they operate as *social technologies of governance* to manage this violence and the resistance it triggers. These technologies are presented as apolitical, technocratic solutions, but serve to normalise and invisibilise the violence, the destructiveness of extractive industries and state-supported industrial growth, intensifying under neoliberalism (Bruff, 2016). Biodiversity offsetting serves to draw in conservation organisations, the *offsetting industry* and academics into the world of corporate conservation and green mining; anchoring corporations as saviours of biodiversity; 'greening' their operations and sometimes even legitimising cultural genocide through displacement and destruction of social and political structures in communities and social relationships (Padel and Das, 2010). These processes play into and reinforce narratives (and realities) of risk and audit - through co-option of once radical demands for transparency and accountability, and through pacification by means of spectacular conservation efforts that are meant to compensate for social and ecological destruction. Their effects on the ground will be examined in the next chapter.

6. Licence to operate – licence to trash – licence to pacify? Biodiversity offsetting in the German lignite coal mining sector

[Compensatory] Recultivation is our business card for us mining companies ... It continues to be important to us to remain a reliable neighbour (RWE's recultivation conference, 2017)

The German state of North Rhine Westphalia (NRW) is not only the most densely populated area of Germany, but it is also home to the largest lignite coal deposit of Europe with some 55 billion tonnes of coal. Much of the landscape is shaped by mining operations that were undertaken as early as the 16th century, as "[i]ncreasingly large opencast mines were moving 'through the landscape, devastating the original landscape on the working benches and establishing new landscapes on top of the mine's backfill'" (Imboden and Moczek, 2015; citing Dworschak) – landscapes that are now dominated by industrial agriculture, high speed transport and electricity infrastructure, a dense network of cities and towns as well as some remnants of the old-growth forests that once covered the area.

The last remaining one of these forests is the *Hambacher Forst* (figure 17), a highly biodiverse old-growth forest that is currently being cleared to give way to the expansion, or, in the words of RWE, the 'migration', of the Hambach mine – one of three lignite coal mines in the Rhineland, the world's largest opencast lignite mine (Schmitz, 2006) and Europe's 'biggest hole' (Michel, 2005: 16) (figure 18). Half of the landscape that once covered the mine area was forested, half of the forested area consisted of deciduous forests, "potentially the forests with the highest structural diversity and biodiversity composition in the region, and also likely to harbour species of special interest and concern" (Imboden and Moczek, 2015: 15). The *Hambacher Forst* – historically managed as communal land – constitutes what German biologists call a *Maiglöckchen-Stieleichen-Hainbuchenwald*, a type of forest characterised by lilies of the valley, pedunculate oaks and European hornbeam, protected under the EU Habitat Directive (Jansen, 2012). It is home to the endangered middle-spotted woodpecker, protected under the EU Birds Directive, as well as the Bechstein's bat, agile frog, and hazel dormouse, among others.

Figure 17 Hambacher Forst (own photo)

Figure 18 The migrating mine (Perschke, 2012)

The *Hambacher Forst* fulfils all requirements of the Habitats Directive to be recognised as a protected area and become a Natura2000 site – it is home to 142 species of special importance, including twelve strictly protected bat species (BUND, 2012). Yet, only two small areas located

outside of the mining area have been reported to the EC – against EU law, according to the German FoE group, BUND, who are currently suing the German government to stop all forest clearance on the basis of this omission. To compensate for the clearing of the *Hambacher Forst*, and especially the endangered Bechstein's bat habitat, the mining company is legally required not only to recultivate the mining area after mine closure, but to implement additional compensation measures, or offsets (*Ausgleichsmaßnahmen* in German nature protection law). These measures are mandatory under German law: the mining laws that require restoration of mining areas, the German Nature Protection Law that prescribes the Impact Mitigation Regulation (explained in the introduction), as well as the EU Habitats Directive that dictates compensation for the loss of habitat of threatened species. Compensation measures for the Bechstein's bat include 700ha of 'bat infrastructure' to connect remaining fragments of old woodland surrounding the mine and a €4 million 'green bridge' over the nearby A61 highway to serve as "crossing aid for the bats from Hambach Forst" (RWE AG, 2015a: 53). The most important compensation measure, however, is the newly restored natural area *Sophienhöhe*. The *Sophienhöhe* is an artificial low mountain range – the largest artificial mountain in the world – covering 13km^2, with a height of 280m and praised for its ecological success in recreating habitat for number of species – as well as, coincidentally, a convenient way to dispose of the initial 2.2 billion m^3 overburden (soil) that were generated in the first six years of the mining operation – before any lignite layers were reached at all (Imboden and Moczek, 2015). This mountain of 'overburden' has been restored and reforested following reclamation, blending and depositing of soil, to offset the destruction of the *Hambacher Forst*. While compensation measures are a legal requirement for mining operators in Germany, the *Sophienhöhe* goes much beyond these legal requirements. Historically, the company has always invested massively in recultivation and offsets – but these efforts have intensified even more so in recent years. RWE's offsetting activities are embedded in a diversity of strategies, undertaken by RWE and the state of NRW, to manage resistance against its mining activities.

The displacement and resettlements of homes, associated air pollution and the environmental destruction necessary for the 'migrating mine' has triggered resistance, beginning in the 1970s and continuing into the present – with citizen initiatives, mass-protests and a forest occupation attempting to block the expansion of the mine. Environmental activists initiated a campaign against RWE's three coal mines in the Rhineland, with annual climate camps and mass-civil disobedience since 2010. Others engage in human chains, demonstrations, art performances, nature walks and legal battles against RWE. In 2012, forest defenders occupied the neighbouring *Hambacher Forst* to stop the mine. In November, over a four-day period, they

were forcefully removed by over 500 police officers in what is alleged to be the most expensive eviction in German police history. Following the eviction, a local resident bought land next to the forest to host a permanent protest camp. Shortly thereafter, the *Hambacher Forst* was reoccupied, and now serves as a permanent point of resistance against the mine. Forest defenders began living in tree houses to protect the forest, while working to stop the migrating mine, through road barricades, tree platforms, tree-spiking and the placement of 'potential improvised explosive devices'[43], and sabotage of coal-transportation infrastructure. Militant and peaceful protests actions have been met with increasing repression by security and police personnel.

This violent repression complements a diversity of soft corporate strategies to secure acceptance of, and pacify resistance against the mine, anchored in RWE's sustained 'greening' activities – most notably its offsetting work – which plays into a multiplicity of PR campaigns and CSR measures that RWE has engaged in for decades. RWE's nature compensation work plays a fundamental role in lending legitimacy to – and 'greening' – RWE's mining operations, by, firstly, acting as anchor for stakeholder engagement and partnerships, co-opting critics and dividing-and-conquering the conservation community; secondly, establishing RWE as 'good corporate citizen and responsible neighbour'; and thirdly, and most importantly, invisibilising the slow violence inherent in coal mining, and the violence exercised against those who resist its operations. It constitutes what Douglas Rogers has called a "corporate social technology" (2012), complemented by 'soft' strategies of co-option and engineering of consent as well as 'hard' strategies of criminalisation and violent repression of resistance – while constructing the myth of 'sustainable coal' and maintaining a supportive regulatory environment. Offsetting – and RWE's recultivation work more widely – I will show, has always been fundamental to this "engineering of consent", the company's licence to operate, its image as "good corporate citizen", and its claims to "upgrade nature" – of creating a "better nature" and a "better future" – through the use of spectacle, imaginaries and narratives to capture imaginations. RWE's offsetting work forms the foundation for much of their outreach, communication and PR work – including tours through the offsetting area, scientific collaborations, educational material, environmental education activities, and partnerships with conservation organisations and nature lovers. Offsetting, I will show, thus not only acts as a *social technology of governance* to deal with dissent, but plays a fundamental role in the entrenchment and institutionalisation of RWE's interests in the Rhineland, the (historically) unquestioned support for coal mining, and the normalisation and legitimisation of corporate and state violence against the resistance,

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[43] These are fake devices to keep police and security personnel out of the forest.

against the earth and against its inhabitants, especially those who are already marginalised, live in areas particularly affected by climate change, or close to a mine.

This chapter provides a European case study of the role of offsetting in legitimising ecological and social destruction, illustrating how offsetting – through the ongoing co-option and suppression of contestation – is integral to accumulation and control, playing into processes of accumulation by dispossession (Harvey, 2004) and accumulation by restoration (Huff and Brock, 2017) – not through the creation of new investment opportunities or asset classes, but by securing RWE's core activities – coal mining. Offsetting contributes to the reshaping of the politics, social relations and conceptions of 'nature' within communities to maintain operational legitimacy in the face of ecological crises, anthropogenic climate change and determined opposition. This is remarkable given not only the physical location of RWE's mining operation – we tend to expect such processes in the global peripheries, not the heart of Europe – but also the close connection of RWE with the German state. The interests of the state, I will argue, are inseparable from RWE's. This chapter thus also focuses attention on the power relations behind offsetting, and its productive power – by supporting claims of corporate citizenship, the role of the German state is strengthened too.

This chapter proceeds, firstly, by providing some background on the Hambach mine, RWE and their political activities – from EU lobbying to collaboration with municipal politicians. I then give a short overview of the multiple forms of resistance against the mine, focusing on the dialectical interrelationship between resistance and "political reactions from above" (Geenen and Verweijen, 2017: 2). I analyse RWE's efforts to 'engineer consent' and suppress resistance by, firstly, examining the multiple corporate social technologies that heavily rely on PR and CSR strategies and recreational infrastructure. This is followed, secondly, by an analysis of RWE's 'harder' techniques that involve the criminalisation and repression of, and violence against, the resistance. An overview of these strategies is crucial to understand the interplay with RWE's nature restoration work, introduced in the next section. I then examine how offsetting plays into RWE's novel imaginaries and narratives around a 'better future' and a 'better nature', naturalising RWE and facilitating its positioning as good corporate citizen, before I conclude.

6.1.   The migrating mine

Excavation of the Hambach mine began in 1978 and is scheduled to be completed by 2045. The total allocated mining area covers 85 km^2 or 8,500ha – 12,000 football fields (RWE Power, 2014). The mine deposit holds some 2.5 billion tonnes of coal, with current annual extraction at

43 million tonnes (RWE Power, 2014) that involves the shifting of around six times as much soil (overburden) and the constant pumping of ground water to lower water levels to -500m. In total, the mine extracts more than one million tonnes of coal and cubic metres of overburden a day (Schmitz, 2006). Most coal is burnt in the four surrounding power stations, run by RWE. The biggest power station, in Niederaußem, is Europe's single largest source of greenhouse gases, with annual CO_2 emissions of 30 million tonnes (Michel, 2005: 16). The three RWE mines in the Rhineland together produce 14% of all electricity in Germany, and almost 50% of the state of NRW (RWE Power AG, n.d.).

Lignite coal electricity generation was elevated to "strategic military status" in Nazi Germany under the 1935 Law for Promoting the Energy Industry, adopted to strengthen wartime capabilities and enable the eviction of entire communities for coal excavation (Michel, 2005: 29). Despite pledges to remove all Nazi laws from the books, Jeffrey H. Michel argues, "the spirit of these wartime expediencies prevails in many energy regulations to this day" (2005: 29). The Federal Mining Act, revised in 1980, stipulates the "compulsory relinquishment of private property to mining companies … by eminent domain whenever public welfare is served, particularly for providing the market with raw materials, securing employment in the mining industry, stabilizing regional economies, or promoting sensible and orderly mining procedures" (Michel, 2005: 41-2). In 2007, the constitutional court upheld these provisions in a case ruling in coal mining in the Rhineland, as long as resettlement lies in the "public interest" (Lohmann, 2009).

The Hambach mine alone 'requires' the displacement and resettlement of 5,200 people until 2040 (Jansen, 2012; BUND, n.d.). A total of 42,000 people will have lost their homes in the Rhinish coal region by then; 142 towns and farms in 20 municipalities (dpa, 2016). Whereas in the past, resettlement conditions had been "generous", one interviewee reports, more recently "RWE has become stingy. They pay for less and less" (F3). RWE's compensation is based on house value, assessed by 'independent' experts, according to the company. However, residents criticise that they were not allowed to choose their own assessors, or verify the value assigned. Many residents become indebted and have to sell their houses back to RWE. Due to the time discounting in the valuation process, compensation often does not suffice for new buildings (Kirschengens et al., 1985: 22). Many have thus become tenants, being forced to rent from the company that was responsible for their displacement in the first place (Kirschengens et al., 1985). Other residents speak of "compulsory expropriation" – against which suing is "pointless". A number of lawsuits filed against the expansion of the neighbouring Garzweiler mine have

been declined by the courts (Martin, 2004). Elderly people frequently can not cope with these changes, I am told by residents, and "we have high suicide rates in the region" (F3).

> *Twenty years before demolition, when mining plans become public, villages lose their future, any development perishes. No one builds any more, younger people move away. Years before resettlement, you have to negotiate with Rheinbraun [now RWE], you have to sell, otherwise you will be expropriated (Kirschengens et al., 1985: 1).*

6.2. RWE'S political power: Lobbying and revolving doors

The Hambach mine is operated by RWE AG, the largest German electricity provider and leading utility holding company (RWE AG, 2015b), founded in 1898, which historically held monopoly control over the (West) German electricity grid (Spiegel, 1979). The history of the mine is also a history of RWE's influence over local decision making processes, resettlement negotiations, regional planning and national energy policy, as will be explored below. RWE is the single largest European emitter, responsible for twelve percent of CO_2 emissions in Germany (IWR, 2012). Although significant human and financial resources are spent on the cultivation of its image as 'sustainable', the corporation is lagging behind in their investments into renewables and has only recently started to invest into wind, solar and thermal energy, outsourced into their 'green' daughter company, Innogy Lmt, in 2016. In 2016, only 5% of their electricity production in Germany was based on renewables, compared to 55% based on coal (Statista, 2018). The company is materially locked into the coal path (Haas and Sander, 2016). Following a period of low electricity prices, the company is in serious financial difficulties, with total debt equalling eight times its total revenue, and has been downgraded by Standard & Poor's and Moody's to BBB/negative outlook, and BAA2/negative outlook, respectively (RWE Group, 2015: 11). In 2015 alone, RWE shares lost 52% of their values (Andresen, 2015). Low shareholder returns and pressure from campaigners have led cities and communities to divest from RWE: The city Bochum, for instance, has started selling its 6.6 million RWE shares in October 2016 (Rorowski, 2016).

In July 2011, then-CEO Jürgen Großmann declared: "What is good for RWE, is good for the public coffers" (VKA-RWE, 2012) reflecting not only how corporations often position their interest as the "higher good" (Dugger, 1989), but also the close political financial entanglements between the corporation and local communities, explored below. Yet the claim that RWE's operations benefit the public coffers disregards the German environmental ministry's findings that roughly one billion Euro/year subsidies are provided to lignite power production, in addition to the financial burden of environmental and health detriments of at least 3.5 billion

euro/year (Lechtenböhmer, Kristof and Irrek, 2004; Michel, 2005: 5). Additionally, BUND estimates that up to 50 percent of resettlement costs in the Rhineland are born by the state and municipalities (Lechtenböhmer, Kristof and Irrek, 2004). Of the 182 million Euro spent to relocate the highway, necessitated by the mine expansion, RWE contributed 84.5 million Euro, the remaining 107.5 million were state funds (Meisen, 2014).

Analysing the continuing political importance of mining in Germany, Jeffrey H. Michel (2005: 77) argues that: "The German lignite industry operates on the premise of overt political influence", a skill undoubtedly mastered by RWE. One research participant goes so far as to claim that RWE is "the single most influential corporation in the German political landscape" (F5). Already in 1979, the German news magazine Spiegel warned: "Unrivalled and barely manageable, RWE is ruling over one of the largest monopolies of the Western world" (1979). Yet, more often than not, this influence has been exercised in collaboration with, rather than opposition to the state. In the 1970s, municipalities held 60 percent of shareholder voting rights in NRW and thus had a significant say in corporate decision making (Spiegel, 1979). The strength of municipality decision making has made them important collaborators in legitimising RWE activities. Currently, 32 municipalities, 20 cities, seven associations and firms—large banks, insurances and the NRW Chamber of Agriculture—are RWE shareholders. The high level of financial entanglement and shared interests has helped RWE enforce its objectives, exerting political influence even when these appear to contradict governmental interests (Spiegel, 1979; Liedtke, 2006; Gründiger, 2016; Hissel, 2015).

Gerald Neubauer's mapping of the relationship between German politicians and the coal industry exposed 17 high-level politicians spanning the political spectrum with close ties to RWE – as board chairs or board members – even in environmental ministries (2013). Two leading politicians were forced to resign in 2004 when it was exposed that they had been receiving payments from RWE of 60,000-81,000 Euro/year (Neuber, 2004), triggering the revelation of "[n]umerous illicit benefits provided by corporations to German parliamentarians" (Michel, 2005: 77). In 2015, a German Member of European Parliament, active in the Environment Committee, had to step down from RWE's advisory council (Bank, 2015). Currently, two of RWE's board members hold seats in the German parliament or Landtag. Nationally, RWE has been at the forefront of lobbying efforts against the German energy transition (Energiewende) and for the extension of the operational lifespan of coal mines and nuclear power plants,

together with the influential neoliberal 'cross sector cross party NGO' *Initiative New Social Market Economy,* in which it plays a leading role[44].

In addition, RWE entertains very close ties with a number of DGs of the EC, where it promotes the Energy Union that involves EU-wide energy infrastructure development (chapter four), but also follows closely the climate change and nature conservation discussions (as visible in their communication and face-to-face meeting about the NNL, outlined in chapter four). Three of their lobbyists have direct access to EU institutions and their representation is further institutionalised in EURELECTRIC (also member of the NNL working group). In 2015, RWE spent two million Euro on lobbying in Brussels and received approximately 1.3 million Euro through research and development funds – such as the LIFE + programme (EU Transparency Register, 2016). In 2010, RWE was awarded the "Worst EU Lobbying award" by environmental NGOs for its campaign against directives to impose reductions on industrial pollutants and CO_2 emissions (FoE Europe, LobbyControl and CEO, 2010).

These overlapping networks of power and influence are even more entrenched on the local level, as will now be illustrated.

RWE in the Rhineland

They are everywhere … They managed to get people into all positions that matter …
Wherever decisions are taken, you find people who work for RWE or have worked for RWE.
They did that really well (member of local citizens initiative, F1).

There is a unique structural dependency of local municipalities in the Rhineland on RWE's financial wellbeing. Just under twenty-five percent of RWE's shares are owned by local authorities (VKA-RWE, 2012), which makes local authorities not only licensers, shareholders and clients, but also RWE constituencies, employees and tax collectors. Refusal to license operations or grant permits would thus negatively impact municipalities' ability to finance their budgets. RWE has been driving the privatisation of public utility companies, acquiring between twenty and seventy-five percent of shares (Rügemer, 2006), and through its subsidiaries RWE is involved in municipal electricity, gas and water distribution networks and street lighting systems (RWE Group, 2015: 89). Furthermore, in 2004 it was exposed that RWE convenes so-called "regional advisory councils" through which the company has been paying over 100 local politicians some 600,000 Euro/year (Spiegel Online, 2005). Financial payments by corporations

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[44] The initiative campaigns for cut-backs to the welfare state, for so-called 'market-based' instruments and 'pro-business climate' among policy makers and the general population (Speth, 2004) – as well as against the subsidisation of renewable energy as part of the *Renewable Energy Law* (Lobbycontrol, n.d.; Bundeskartellamt, 2011). Its board of trustees is chaired by Wolfgang Clement, former German minister – criticised for backing high subsidies to the coal industry of 80,000 Euro/job, and his outspoken support for the nuclear industry – and RWE board member since 2006.

to regional politicians – serving on boards of directors or (regional) advisory bodies – are explicitly legal under German law (Rügemer, 1997), and have been criticised by a previous minister of labour as "legalised corruption" (Spiegel, 1979).

In addition, RWE's power is engrained in their representation in local life, as the quote above illustrates. Whether it's the city council or the local church council, several interviewees report, RWE has managed to "infiltrate" almost all local decision-making bodies (F1, F2, F3, F5, G1). This goes beyond astroturfing and proxy NGOs (discussed later), amounting to the appropriation of the structures of governance themselves. In the city council of Kerpen near the Hambach mine, a member of a local citizens' initiative explains, thirteen of the former twenty-three members of the Social Democratic Party were current or former RWE employees. The personal entanglement between RWE and local politics, as well as its omnipresence within local political and social institutions, a local activist explains, makes opposition "much more difficult". Local churches, for instance, although supportive of the resistance, do not publicly voice their support, the research participant continues: "[Y]ou will be held accountable for these decisions"; residents working for RWE will "watch you", noting who helps the "rowdies" or "people from the forest" (F2). Similarly, a resident explains that criticising resettlement in Manheim was difficult:

> RWE's former executive chairman is married to Manheim's Ortsvorsteherin [similar position to that of a mayor]. His brother was chairman of the Bürgerbeirat [citizens' advisory council, convened by RWE and the local government] and contractor. He profited [from resettlement] … it's like a mafia … You don't just go and say 'Folks, I'm going to tread on your toes. Because then you end up with bruised toes (F3).

At times, this dependence is more structural. Agricultural recultivation, for instance, is negotiated with the Chamber for Agriculture – itself a RWE shareholder and therewith dependent on RWE's financial wellbeing.

The 'public-private partnership,' emblematic of neoliberal contracting (Hildyard, 2016), between the company and the German state can also be observed in the close relations between RWE and the police. The head of the local police responsible for controlling the August 2015 Ende Gelände mass direct action against the Hambach mine, for instance, was a member of RWE's advisory board until just days before the protest action (CEO, 2015). The police have been criticised for using RWE vehicles to patrol the mine and transport arrestees (Blume, 2015; confirmed by activists) – testifying to a "private-public partnerships in the security realm" (Hissel, 2015). Activists have also reported close police-RWE collaboration in operations in the *Hambacher Forst*. In recent years, logging operations were accompanied by dozens of police

officers protecting every cutting vehicle. In addition, the NRW police force is controlled by the state's parliamentary Interior Committee. One of its most active members is Gregor Golland, a member of the state parliament doubling as RWE employee with an annual corporate salary of up to €120,000 – only slightly less than his government salary of €128,712 (Funken, 2016a). Not only is he a deputy member of the environment and economic committees, with privileged access to information that could affect RWE (abgeordnetenwatch, 2017), but he is also responsible for internal security and police deployment – including major police operations in the *Hambacher Forst*. He has been vocal in his condemnation of the occupation and alleged violence, calling for a "tougher approach" (personal communication) towards "radicalised environmental activists" (KStA, 2016).

These overlapping networks of power and influence point to the ways RWE are securing their unique political influence that are widely described as "political landscape gardening" by local residents and activists. RWE's political influence testifies to an entrenched 'private-public partnership' with the German state, which, as will be described below, deeply shapes the 'managing' of dissent and the 'engineering' of consent around the Hambach mine. The resistance movement against which this managing of dissent is directed will now be introduced.

Resistance and contestation in- and outside the political forest

Regardless of the oppression the state throws at the Hambacher Forest, like the microbes, insects, plants, birds, and animals cohabiting all of our living barricades, that remain alive with the spirit of resistance, Hambacher Forest will remain as not just a reminder but also a call to action…

Day and night, we lay in the woods, watching, waiting, ready to strike at any moment, and should you imprison or strike down any one of us, as you now well know, there will be consequences, here in Germany, or anywhere else in the world where RWE spreads its sickening tentacles (Anonymous, 2016: 91).

The history of the mine is also a history of resistance. When the mine was planned, permits were granted, and exploration began in the 1970s, the mine was justified as 'without alternative' – coal was seen as not only historically part of the Rhineland history, but indispensable for electricity production. Yet, despite intensive PR campaigns, from the very beginning of the Hambach mine – licensed in the midst of the oil crisis and among fears of dependency on foreign energy – local groups formed to resist the operation, the associated displacement and resettlement of villages and the planned relocation of a highway. While until then, Achim Schumacher and collaborators argue, "the reasonableness and necessity of mining were largely undisputed [in Germany], this mine development was the first to trigger

resistance", representing changing public perceptions and attitudes towards large projects and rising environmental awareness (2014b: 26; confirmed by interviews G1). Citizens formed the first initiative against the mine in 1979, a students' group was set up at Aachen University around the same time, and legal challenges against mine operator and planning authorities were launched[45]. Groups have organised various creative forms of protest, including concerts inside the mine by Klaus the fiddler and the Orchestra for Social Change, human chains and demonstrations. As early as 1982, activists, in collaboration with the bicycle club 'Solidarity', organised a cycling demonstration to *Sophienhöhe* to protest against the destruction of the *Hambacher Forst*: they 'laid a wreath for ruined nature', celebrated a 'requiem for a lily of the valley' and read poems (Springer, 1985: 76). While this resistance remained at the local level for many years, since 2011, annual climate camp and mass civil disobedience actions with over one thousand participants have targeted the three Rhinish mines, passing mine security, breaking police lines and shutting down the mines. The responding police violence led to hospitalisations (Kreutzfeldt, 2015) and made national and international headlines, triggering much support as well as negative responses.

To stop the destruction of the forest and the expansion of the mine and to reclaim the forest as public space for people to meet, network and work together for social change, activists set up a forest occupation inside the *Hambacher Forst* in 2012. Despite a number of violent evictions (and re-occupations), they continue their forest and meadow occupation until today; they build tree houses, tunnels and barricades to stop the clearing, and carry out sabotage against RWE equipment and infrastructure (i.e. short circuiting power lines, burning of pumping stations, radio-masts and electrical transformers) and the ambushing of security-police patrols with stones, slingshots, fireworks and Molotov cocktails (Anonymous, 2016). At present, the encampment has been evicted (and reoccupied) three times. The occupied forest has been declared an "outlaw area" and been subject not only to police brutality and physical and verbal abuse by private security service and RWE personnel, but also to increased surveillance through helicopters, ID controls and security patrols.

Having outlined the unique position that RWE occupies in the German political economy and introduced the resistance movement, I now move to explore the multiple soft and hard strategies that have enabled RWE to maintain a relatively good image in the face of strong opposition.

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[45] Other initiatives and projects include the Initiative Buirer für Buir, STOP RHEINBRAUN e.V., Citizens' Initiative Bergbaubetroffener am Niederrhein e.V., Stoppt RWE, Network Bergbaugeschädigter, ausgeCO2hlt and Werkstatt für Aktionen und Alternativen. Legal challenges by BUND, the German section of Friends of the Earth, and a local landowner are still ongoing.

6.3.   'Dirty coal is good for you': engineering and buying consent through CSR, PR and outreach[46]

The key question [for the energy sector] is … not how to avoid protest, but how we can manage protest" (Sebastian Schwark of the famous PR agency Hill+Knowlton, cited in Peter, 2009).

Rafael Pagan Jr. is considered a 'guru' in the PR industry and has been teaching multinational corporations – or their CEOs and CSR managers – how to 'defend themselves' against public interest activists. He is founder and former president of the Nestlé Coordination Center for Nutrition, where he promoted Nestlé's controversial infant feeding formulae in the 1980s (Richter, 2001). He divided activists into four categories: radicals, opportunists, idealists and realists; and outlined a three-step divide-and-conquer strategy – to co-opt the debate and to isolate the movement – for corporations (Lubbers, 1999; see also Stauber and Rampton, 1995). The goal is "to isolate the radicals, cultivate the idealists and 'educate them into becoming realists, then co-opt the realists into agreeing with industry" (Lubbers, 1999). Already in 1982, he urged corporations to engage in dialogue with their critics to deal with the "international regulatory mood" and "remain in business" (in Richter, 1998). He outlined his wider PR strategy for TNCs in a speech to the Public Affairs council, where he recommended a number of strategies to deal with resistance. Judith Richter summarises: "organizing effective [business representation] NGOs"; "working with national and international civil servants 'not to defeat all regulation, but to create regulation that legitimises and channels our rights, opportunities and contributions; reaching out to hold an ongoing dialogue with the many new publics whose understanding we need to remain in business; separating the 'fanatic' activist leaders from those who are 'decent concerned' people, and 'stripping the activists from the moral authority they receive from their alliance with religious organisations'" (Pagan Jr., cited in Richter, 2001: 149).

Such strategies became very important in the late 1980s and 1990s as pressure on the industry increased, threatening profits, access to land and 'licence to operate' (chapter five). The "science of propaganda", John Stauber and Sheldon Rampton argue, is not new: they trace it as far back as Aristotle's *Rhetoric* (1995: 15-17). Yet, the PR industry is a twentieth-century phenomenon, boosted during and after World War One. One of the earliest PR practitioners, Edward Bernays, claims that:

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[46] This heading draws on Stauber and Rampton's *Toxic sludge is good for you*, an exploration of the "lies, damn lies and the public relations industry" (1994).

> *the scientific manipulation of public opinion was necessary to overcome chaos and conflict in society … In almost every act of our daily lives … we are dominated by the relatively small number of persons … who understand the mental processes and social patterns of the masses. It is they who pull the wires which control the public mind (in Stauber and Rampton, 1995: 23-4).*

The psychologist and corporate propaganda theorist Alex Carey warns:

> *The twentieth century has been characterised by three developments of great political importance: the growth of democracy, the growth of corporate power, and the growth of corporate propaganda as a means of protecting corporate power against democracy (1978/1995: 18).*

Communication theorist Harold Lasswell explains that 'propaganda' "is cheaper than violence, bribery and other possible control techniques" (1934: 524), or, in the words of Paul Virilio, "[b]eating an enemy involves not so much capturing as captivating them" (1995: 14). PR constitutes a struggle for the hearts and minds of people – whether to pledge loyalty to corporate brands or 'engineer consent' for megaprojects – which becomes visible in contestations over natural resources, whether traditional fossil fuels or renewable resources (Dunlap, 2018). This 'new corporate activism' involves a diversity of PR strategies – often integrated into CSR initiatives that enable corporations to accumulate and exercise power (Rajak, 2011a) – many of which are displayed by RWE and explored in the next section.

Engineering consent: RWE's corporate communication and astroturfing activities

Since the approval of the initial plan for the Hambach mine, RWE has invested heavily in PR work to delegitimise opposition groups and win the 'PR war' for the hearts and minds of the general public (McQueen, 2015). In the early 1980s, RWE spent considerable financial resources to dispel public concerns about "irreparable ecological consequences" that had been raised by government authorities and environmental groups (Spiegel, 1982). In 1980, the environmental ministry suppressed a study warning of the disastrous ecological impacts of coal mining in the region (including biodiversity loss, ecosystem degradation and desertification) that doubted RWE's ability to recultivate the area (Spiegel, 1982). This highlights how corporate PR strategies do not only involve promotion but also work via censorship that also affect the domain of 'science'.

In addition, RWE built up their own channels to promote its image and message in schools, public events, museums, exhibitions, information centres and tourist sites. In its permanent exhibition in the 16th century castle *Schloss Pfaffendorf*, RWE host a museum about coal mining, with interactive exhibits and a big screen fifteen-minute video explaining coal mining technologies, safety precautions and their recultivation work. RWE rents out the castle for

weddings, Christmas parties, corporate and other events, and hosts free concerts during the summer. Likewise, in the *Innovative Information Centre Niederaußem* the company showcases its research on CO_2 'cleaning technologies' and 'tomorrow's technologies' in an interactive exhibition. Above the edge of the Garzweiler mine, RWE built a skywalk to provide "the perfect panorama of coal mining processes, dumping of overburden and power stations" (RWE Generation, 2015: 28). This communicative social infrastructure supports RWE's efforts to reach target audiences, promote desirable opinions, and sustain specific types of behaviour, which work towards ensuring a favourable public opinion to maintain political support and regulatory environment.

In response to some political success and influence of NGOs, transnational corporations have started to use 'astroturfing' techniques to lobby decision makers – the creation of fake grass roots groups and campaigns to influence public opinion and lobby local and national decision makers for new legislation and regulations favourable to corporate interests (Austin, 2002; Peter, 2002; Williams, Munger and Messersmith-Glavin, 2013; Irmisch, 2011; Lyon and Maxwell, 2004). These tactics are meant to complement increasingly aggressive PR campaigns and legal processes and capitalise on the public legitimacy and credibility of citizen initiatives. According to Claudia Peter (2002: 147), "the 1990s saw a virtual flood of Astroturf groups in Germany". Already in the 1990s, RWE funded initiatives to resist wind energy development (Peter, 2002; Lobbycontrol, 2016; Smid, 2012). The company has continued to resort to astroturfing to safeguard their mining activities, being involved in a supposedly independent citizens' initiative to defend lignite coal in the Rhineland under the slogan: "Our revier – our future" (Unser Revier, n.d.; Müller, 2016; Haude, 2015)[47]. The initiative claims to oppose the lobbying efforts of NGOs and "aggressive environmental groups" (Unser Revier, n.d.), but it was quickly revealed that it has close ties to RWE. Additionally, RWE has been involved in setting up two Facebook groups in which mine supporters regularly call for violence and abuse against forest defenders.

Much of RWE's PR work is being undertaken by the semi-outsourced "research centre recultivation", responsible for ecological work, and heavily involved in the company's outreach work, promoting RWE's biodiversity management vis-à-vis external parties. Employees of the centre engage with the general public, lead tours through the offset area, collaborate with scientists and organise conservation conferences to promote the company's recultivation work

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[47] The German term *Revier* is not only associated with the mining industry (coal-mining district), but also to denote police districts. In this context, the term is thus implying solidarity with coal miners, but also associated with a degree of autonomy in the more militant sense.

and engage with conservation organisations. This work plays into RWE's CSR work, to which I now turn.

Omnipresent sponsorship: buying consent?

RWE is "everywhere", local activists explain, with its tentacles spread out "like an octopus", fusing itself into the cultural and economic life around the mines. The company has "infiltrated", I am told by a resident (F3), the social fabric of surrounding towns through sponsorship of local events and associations, seeking to gain legitimacy through the local authorities they sponsor. Sponsorships include events organised by police and fire departments (such as barbeques), bouncy castles for kids, 'mobile fun centres' and school events (E6, F2, F3, F5). The company sponsors local football clubs, carnival associations and parades, traditional festivals (*Schützenfeste*) and sports events for students, and finances a "baking cart" that drives across the country handing out baked goods, recipes, RWE material, and energy saving advice. Even the Michael Schumacher Cart and Event Center is financially supported by the company (MS-Kartcenter, 2016).

The company further entertains a corporate volunteering initiative, *RWE Companius,* that finances initiatives and gives paid leave to employees participating in regional projects – over 1,300 projects in 2015 (RWE Companius, 2016). Projects include caring for the elderly and raising awareness about, and funds for, child malnourishment among RWE employees (to be matched by the company), in partnership with the charity organisation *Johanniter-Unfall-Hilfe.* The company is explicit about the aims of these initiatives: increasing a positive perception of – and identification with – RWE (RWE Companius, 2016). The project is accompanied by "promotional material" in the form of flyers, posters and information stalls in front of RWE canteens and inside (!) children's day care centres, which constitute an opportunity to spread its message outside its usual channels. What the company does not promote is that as an active member of the *Initiative New Social Market Economy* (and a number of other associations and initiatives), it is itself part of the strong industry lobby for the neoliberal austerity policies (cutting social spending, taxes and privatisations) that entrench people's dependence on the private sector (Speth, 2004) and weaken the social safety nets that make such engagement necessary in the first place.

Every few months, RWE offers guided tours through their mines and power stations; events that are usually attended by hundreds of people, including visitors from neighbouring Belgium and the Netherlands. Local groups that it sponsors (such as the aforementioned *Johanniter-Unfallhilfe* and the *Schützenverein*) sell cake, sausages, coffee and beer to the visitors, and tours

are promoted by local tourist associations and websites. In addition, the company hires a nature guide to offer regular hikes through the biodiversity offset site, the recultivated *Sophienhöhe*. The guide points out, explains and validates their recultivation work and specific measures taken to protect threatened species – including the relocated ant hills, bat boxes and dead tree trunks that are designated compensation measures for the loss of the *Hambacher Forst*. These sponsorships and events contribute to the normalisation of the company in the region and position RWE as "good corporate citizen", part of the social fabric of the region, lending it legitimacy despite the high social, financial and ecological impacts of the mine. As a corollary, the resistance movement is slowly delegitimised.

Shaping the next generation: RWE in schools

"Few, if any, instruments shape national culture more powerfully than the materials used in schools" (The Economist, 2012). It is probably not a coincidence that much of RWE's communication work takes place in and around schools. Since 1998, the RWE Foundation reports to support disadvantaged children and provide 'energy education' and other social/cultural initiatives. Since 2006, the company has distributed 742,000 lunchboxes among first-graders (Wahl, 2015). The foundation offers learning material and role plays for class use, supports the very popular (and prestigious) students' research initiatives *Jugend forscht* and *Schüler experimentieren* and offers 'Learn & Fun' school trips into RWE power plants (3malE, n.d.) as well as "girls' days" in its training centres. School projects are supported with a total of 60,000 Euro for educational games, students' experiments and competitions (RWE, n.d.a). According to the company, they bring in new, innovative ideas, lead to interactive learning games, experimental material – while anchoring positive associations with RWE from a very young age. School projects related to energy efficiency and saving electricity at home, for instance, create connotations with climate protection and progressiveness; and further reach out to parents and siblings, as well as students involved (Kamella, 2013). In a similar vein, RWE sponsors the Duisburg RWE Zoo School in the nearby zoo, where it offers "lively biology lessons" by "zoo pedagogues" to 10,000 students per year (Zoo Duisburg AG, 2016) – while destroying animal habitat in the *Hambacher Forst*.

School initiatives also buy legitimacy and assuage resistance against the mine. According to activists, at the "peak of resistance against the mine" in Buir, the company offered to build a new 'mobile' stage for the school auditorium "with sound system and everything – and the expectation was to bring us 'back on track'"—an attempt to mitigate local concerns with the mine. The WDR (*West German Broadcasting*) has reported about cooperation agreements with

two secondary schools in the middle of the mining area, where RWE agreed to offer school trips, internships and application trainings – in return for publicity in school publications and towards the press, as well as sign-boards in schools' entrance areas (Wahl, 2015). The aim is to raise awareness among students about the significance and the use of the coal industry, society-wide as well as in the region – and to establish the company as "caring neighbour and corporation with social responsibility" (Kamella in Wahl, 2015). In 2012, 250 RWE employees were active as 'energy ambassadors' in German schools (RWE, 2012a). Not surprisingly, in their teaching material, RWE promote the indispensability of coal electricity (see below), highlighting the efficiency and ecological sustainability of their power plants and the significance for employment in the region. The material promotes the recultivation success on the *Sophienhöhe* offsetting site and the recreational opportunities provided (explored below), once again highlighting its recultivation work and the sustainability of its coalmining operation. Similar messages can be found in its two promotional videos that are meant to serve as educational material for students – where the *Sophienhöhe* is praised for its recreational opportunities. Another work sheet includes a fictional report of a teenager who was displaced from her home village and resettled; in RWE's account, she was amazed by her family's beautiful, modern, energy-efficient new house and the accessibility of her grandma's new flat, and praised RWE for the many great projects in the new town (RWE, n.d.b)[48].

New recreational infrastructure to foster pro-corporate ideologies

To pacify dissent against mining projects, Gavin Hilson, chair of Sustainability in Business and previously consultant for Newmont Gold Mining, Gold Fields and the World Bank, and natural scientist Barbara Murck recommend the following strategies: the "implementation of re-skilling programs … establishment of small and medium sized enterprises … Educational and Training Facilities … infrastructure projects such as road and rail development, hospital and school construction, and housing development" (2000). Although usually established in countries of the global South, rather than economically prosperous countries such as Germany, similar strategies can be observed in the Rhineland. Beyond educational infrastructure, RWE has initiated a number of social development projects in the coal region. They include new recreational infrastructure, a novel 'speedway' built on former coal train trails, and a signposted network of cycling and hiking tours that showcase RWE's offsetting (recultivation) work. On the

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[48] Although the direct influence RWE is seeking to exercise through its engagement with schools is remarkably visible, the increasingly important role of corporations (as well as employers' associations and trade associations) goes beyond the provision of teaching material and school partnerships. Reinhold Hedtke (2012) argues that the growing influence of industry lobbyists together with foundations and research institutes form a well-financed political-pedagogical network in Germany, supported by (economic)liberal and conservative politicians, advocating for a particular kind of economic education in schools and promoting corporate-friendly, politically conservative interests. Through its multiple associations and memberships (e.g. DIE, INSM) RWE forms part of this network.

Straße der Energie (energy route), a "tourist route through the Rhinish lignite mining area", the visitor can witness RWE's mines, recultivation work, processing facilities and electricity production from lignite coal, wind and solar (RWE, n.d.c). It guides the visitor through the "Garden of Technology" (co-funded by the EU's Regional Development Fund) and RWE's renewable energy installations. Half a dozen publications outlining these tours can be ordered from RWE; with maps, explanations, trail suggestions and promotional material.

The most notable recreational infrastructure sponsored by RWE is the information centre and viewpoint tellingly named *:terra nova* (New Earth) (figure 19).

Figure 19 :terra nova visitor centre (own photo)

Co-financed by surrounding municipalities (Regionale, 2010), *:terra nova* is a restaurant/bar and information centre embedded in an artificial dune landscape and invokes associations of a beach resort. Its terrace overlooks the mine and is meant to constitute not just a viewing platform, but a beach-like atmosphere, with sunbeds, parasols, outdoor gym and parasols. Seated, enjoying a drink and some food from the *:terra nova* restaurant, the visitor can enjoy the view of the over 200-meter-long diggers that slowly move across the coal desert, appealing to fascination with huge machinery that symbolise modernity and progress. Next to the viewing platform, children are meant to play in the playground modelled after a shipwreck. The resemblance to a beach is not a coincidence – the pit is meant to be turned into a lake following mine closure. The centre houses regular social events, a 'wedding-room' and a football-golf course – as well as RWE's recultivation centre. The building can be rented for (corporate) Christmas parties and is promoted as a meeting place to bring people together. I will return to

:terra nova below, after having outlined the hard strategies that complement RWE's social engineering and greening strategies.

6.4.   Managing and repressing resistance: criminalisation, repression and violence

To co-opt the environmental debate is one side of the coin, to demonize and marginalize the environmental movement is the other (Lubbers, 1999).

Overlapping with RWE's divide-and-conquer strategy one can observe strategies of stigmatisation, isolation and criminalisation of more 'radical' (or un-co-optable) elements in the resistance movement, leading up to the violent repression of more combative activists. On the one hand, the company is engaged in a "Peace Plan" as part of the "Hambacher Dialogue", where it engages with 'moderate' protesters, and has undertaken a large-scale acceptance study, *The Power of Participation*, to explore how stakeholder engagement and dialogue can "avoid or reduce resistance" against megaprojects to protect "the future viability of our business" (RWE AG, 2012: 6-19). In their neighbourhood magazine, RWE printed an interview with Frank Brettschneider, who researches effective corporate communication strategies and advises corporations on how to pacify opposition groups (RWE Power, 2013a). On the other hand, more 'radical' protesters are criminalised and violently oppressed.

In a newspaper interview, RWE CEO Peter Terium speaks of activists as criminals: "They have no ideology, they are sheer criminals and only interested in excessive violence" (Terium in Die Welt, 2016). Elsewhere, he describes the Hambacher Forst as "unbearable escalation", speaking of "professional demonstrators", coming to "riot" (in Balzter and Meck, 2016). "They come from other countries", he continues "some from Eastern Europe, some from a particular scene in England" (Balzter and Meck, 2016), playing into xenophobic sentiments and fears of East European mafias that often dominate German right-wing media. According to other interviewees, activists come from "France and Finland" (E3). In the August 2013 edition of its 'neighbourhood magazine' (figure 20) – coinciding with the annual anti-coal climate camp – RWE displays the resistance movement as "vandalistic" and life threatening to workers' security, describing activists as "violent" and "radical" – as opposed to the company, which is engaged in "constructive dialogue" (RWE Power, 2013a: 2-3).
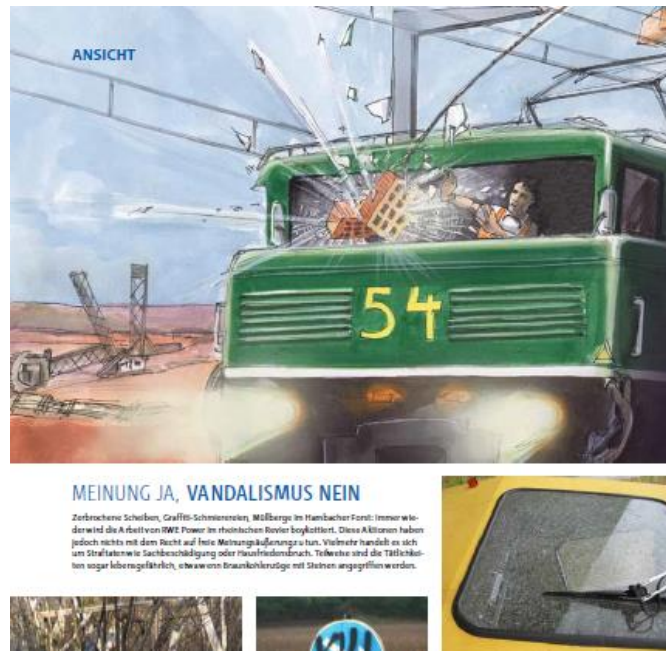
Figure 20 "Opinion yes, vandalism no" – RWE Neighbourhood Magazine (RWE Power, 2013a)

"Dear Neighbours," asks the chairman of the RWE workers' council on the opposite page, "how would you react if you were suddenly attacked with rocks at work?" The police union spreads similar images of 'violent protesters', warning of a "spiral of violence". While criminalising the more 'radical elements', RWE highlights its commitment to stakeholder dialogue and partnership with local initiatives– essential for the long-term trust in, and local acceptance of the company (RWE, 2012b), e.g. through roundtable discussions with regional politicians. Yet, opposition groups in the region contest the company's narrative of 'good neighbourhood relations'. As one member explains:

> [They always say:] 'the climate campers, they are Chaoten [rowdies], but the citizens' initiatives … we are in good dialogue with them'. But that's not true. You can't be in dialogue with RWE. Dialogue is impossible … They tried to buy us as 'mediators' … you have to be very careful.

Other interviewees recall how they are repeatedly asked to distance themselves from people engaging in "violent" resistance, or "the forest" (F2, F3, F4, F5). One member of a local initiative describes: "They criminalise and divide … They call on us: 'Distance yourself from the forest. Those are all criminals' … and part of the press is complicit in this" (F3). This textbook tactic to divide social movements (Gelderloos, 2013) is used to exploit and create divisions between 'the forest' and other parts of the resistance movement. Nonetheless, individuals and groups continue to support and show solidarity with the more combative parts of the movement, despite "occasional disagreement about methods", as described by a campaigner. One interviewee tells me: the *Hambacher Forst* "wouldn't be an 'issue' without [their] illegal actions,

without cables burning, without the occupation. They [the forest defenders] have been contributing so much [to the Hambach struggle]" (F2). Divide-and-conquer techniques have also been used to isolate and co-opt municipalities, e.g. with the threat of job losses. The mine and their operating facilities are spread over different administrative districts. Interviewees report how "local communities and cities were played off against each other" (F3, F5) with threats of moving facilities across local administrative boundaries. When one town legally challenged the relocation of the highway, I am told, it received a letter, warning of relocation of its operations elsewhere, "then you'll just not be getting tax revenue" (F3).

Members of citizens' initiatives and 'less radical' groups have also been the target of defamation. People who "engage politically", I am told, are frequently silenced through the city council, political intervention and other means, while stigmatised as "green wackos" (F2): "Initiatives are being stigmatised and criminalised … through skilled press work by different players, including politicians, trade unions, RWE, and the police". The citizens' initiative "Buirer for Buir", for instance, was stigmatised as "liars" who "manipulate people" by the federal minister of transport at the celebratory opening of the new highway following relocation for the mine (F3).

In addition, the resistance movement has frequently been subject to court cases and legal challenges. In 2015 alone, RWE has initiated legal action against 800 activists and journalists following violent oppression of protest with pepper spray and batons (Blume, 2015; see also Wyputta, 2012). Injunctions and Strategic Lawsuits against Public Participation (SLAPP) are major tools of intimidation and discouragement of resistance. Most cases are soon dropped, but some are used as a deterrence mechanism to set an example, especially when activists refuse to identify themselves. Some interviewees (G1, F5) report arbitrary police harassment of activists, including the confiscation of bicycles as 'stolen' if owners could not recite the frame number (energiezukunft, n.d.), searching of cars with bumper stickers that suggest opposition to the mine (Zimmermann, 2016), constant surveillance, stop-and-search at the local train station as well as checkpoints that work to create a culture of fear – reinforced through constant surveillance. The *Hambacher Forst* occupation and the meadow occupation (as well as surrounding areas) have been under long-term surveillance, authorised by the Aachen district court (Hambacher Forst, 2016c). Both police and security services show constant presence around the occupation and use video recording and cameras to document activists (see also WDR, 2016). According to forest defenders, drones and helicopters have been used for surveillance purposes and members of citizens' initiatives have reported being followed around by private security services (F2, G1).

This culture of threat and intimidation is further manifest in concrete practices against individuals. Activists have reported security guards "verbally engaging in rape fantasies as they intimidated locked on female activists while awaiting the police" (EF!, 2015; G1). The climate camp has also been subject to threats and verbal attacks by security guards, as well as threatening phone calls during the night (Wyputta, 2012). The former driving force behind local community protest against the mine, I am told, received threats against himself and his family. Kurt Claaßen, the owner of the meadow that is the site of the meadow occupation (himself sympathetic of the occupation), reported his garage being broken into and his car destroyed twice; windows broken and tyres dismounted (F2, G1). *Hambacher Forest* activists report police threatening to break their fingers and arms if they did not collaborate in collecting their fingerprints (Hambacher Forst, 2016a).

Intimidation of protesters continues online. RWE employees created two Facebook groups, "For lignite coal and jobs, against eco-extremism" and "RWE-workers for fair reporting", where coal proponents have been posting threats to activists (Döschner, 2015). These groups serve as a meeting point for RWE supporters, employees and climate change deniers, where they post verbal attacks and (death) threats against coal critics and denounce activists as 'eco-terrorists'. At the coal tour through the mine, I could hear similar statements, for example when the bus driver comments: "No digger should ever stop for those activists who chain themselves onto it". Harm to eco-activists is—consciously or unconsciously—applauded by RWE personnel, volunteers and sympathetic politicians. As part of RWE's stakeholder dialogue, a number of local politicians came to see the recultivation work, suggesting that "someone should come and beat them [the activists] up", complaining about the inability of the police to evict the forest occupation and continuing that "in France, at least they are allowed to shoot". Such comments testify to the culture and institutionalisation of hate for those protesting and defending the forest from the mine.

The organisers of the annual Rhineland climate camps were confronted with repression from the beginning, only to intensify with the second camp in 2012. Farmers, (football) clubs and other residents, research participants explain, were pressured not to provide land, water or any type of support for the camp (F2, F3, F5). The local football club, for instance, depends on RWE for advertising and sponsorship and is thus vulnerable to these pressures that "RWE exercises with all available means". Farmers are in an equally precarious situation, one research participant explains: "if you're a farmer and need to swap land in the future, you don't want to antagonise RWE. Because then you'll get a piece of land in the Eifel [60 km away], not here" (F3).

This intimidation coincides with the suppression of critical media reports. On April 25, 2015, 6000 people formed a human 'anti-coal-chain' to protest coalmining in the Rhineland, the largest demonstration the region had seen so far. When the *Kölner Stadt-Anzeiger*, a large regional newspaper, reported 'too positively' on the event on the following Monday, two interviewees report, RWE sent a delegation to "exert pressure" on the chief editor–threatening mass-cancellation of subscriptions (F2, F3). The following day, a double-page editorial was published in the super-regional edition of the paper, entitled "Always accompanied by fear", implying that RWE employees and train operators are under constant danger of being attacked by radical activists. Furthermore, research participants reported instances of attacks on and evictions of media representatives from the forest (G1, see also Hissel, 2015). In 2016, a sympathetic film maker was severely injured by police forces and hospitalised (Funken, 2016b; personal communication). He is not the only one, as shown below.

Physical violence

> *Violence is designed to silence. There are probably hundreds of acts of intimidation that go unreported because perpetrators have succeeded in their aim, using intimidation to 'chill' the environmental or social critics concerned (Lubbers, 1999, speaking about police/corporate violence against activists in the US).*

While this might well be the case in the Rhineland, a number of activists *have* reported physical violence by police, by workers and by security forces, and some instances have been documented – such as the violent eviction of a train blockade in 2013 (figure 21), or what activists claim is the intentional running over of two activists following stone throwing by activists and threats by the driver (Schöneberg, 2016) (figure 22).

Figure 21 Eviction of train blockade as part of the 2013 climate camp (Perschke, 2013)

Figure 22 Alleged running over of two activists in January 2016 (Elbrecht, 2016)

While the opinion of RWE workers towards the opposition varies between individuals, some forest defenders reported attempts of citizen arrests, intimidation and beatings, as well as the hosing down of activists with water in freezing temperatures when locked-on to machinery. RWE security (technically only supposed to use self-defence when under attack), have been documented chasing forest defenders and cutting tree house ropes (to make activists fall six metres to the ground), using pepper spray, wearing masks, throwing rocks, using vehicles to intimidate or attack people, slashing car tires in the encampment, spitting on activists and letting dogs loose to follow them, activists report. During lock-on actions, security personnel actively beat people to the point of breaking bones, teeth and other body parts, while sexually harassing female activists. Similar allegations have been raised vis-à-vis the police. Forest defenders have reported serious injuries and abuse during and following arrest. This includes sprained wrists, haematomas, broken noses and fingers, lost teeth and refusal of medical treatment (Hambacher Forst, 2016b, confirmed by research participants G1). Some activists report that police pepper sprayed and kicked people's faces with boots and beat them outside and inside police custody. At times, the police have fully surrounded the camp to enforce a strict stop-and-search policy that prevents people from moving and acquiring food and water for the camp. In 2015, after escalation of a protest, one of RWE's private employees admitted that "violence emanated from police and security forces", reporting "euphoric" mood among security personnel, looking to pick fights" (WDR, 2015).

Having outlined the diversity of strategies to manage anti-coal resistance in which offsetting is embedded – and many of which are closely entangled with RWE's recultivation work, such as RWE's educational material about, or guided tours through *Sophienhöhe* – I now, finally, turn to the offsetting work itself.

6.5.   No net loss of trees: offsetting RWE's coal mining impacts

We want this craziness to end. Not to be offset (local activist and resident)
Quadratisch, praktisch, gut? (local activist and resident)

A German reader will be familiar with the advertising slogan by popular chocolate producer Rittersport – literally translated into "Square, Practical, Good" – that has by now become a common German phrase to describe functionality. It is this phrase that one of my research interviewees used – reframed as a question, and with sarcastic undertones – in response to my question about RWE's compensation measures to offset for the loss of the *Hambacher Forst*, and it describes well the scepticism with which these are perceived among those who are campaigning against RWE (F3).

And yet, the legitimacy of German coal mining is closely associated with mine operators' nature restoration work – both to rehabilitate former mining sites and to compensate for impacts. The history of coal mining in the Rhineland is thus also a history of nature restoration; fundamental to RWE's processes of accumulation by restoration, explored below. Many of the area's recreational green areas are restored mining areas, and many of its historic sites and tourist attractions are associated with the mining industry. The German term *Baggerseen*, which literally translates into 'digger lakes' and refers to flooded pits, has become a widely used term in the German language. Whereas historically, mining recultivation (conducted as early as 1784) had economic reasons, including dependence on forests as an important economic resource, in the 20th century, companies started experimenting with 'greening land' through planting different kinds of trees to stop erosion, increase land value and create hunting opportunities (Schumacher et al., 2014a).

According to German mining laws, mining companies have a duty to reclaim or restore areas that are used for mining purposes (BBergG, 1980: §55). However, the Federal Nature Conservation Act and its requirements under §15 still apply – mining corporations still have to implement offsets in case of permanent loss of habitat (van Mäßenhausen, 2016). Compensation is considered in terms of functional restoration of the ecosystem – restored or offset elsewhere (BNatSchG, 2009: §15). If recultivation measures do not suffice, other compensatory/offsetting measures are required. These may involve forced displacement of people, according to mining laws (BBergG, 1980: §77). The German *Impact Mitigation Regulation* set out in the German nature protection law and its restoration and compensation requirements also apply to the mining industry, despite the "special status" of mining operations (van Mäßenhausen, 2016). To comply with the Habitat Directive, German nature

legislation stipulates that projects that impact EU Natura2000 sites require EIAs (BNatSchG, 2009: §34) that may require compensation. However, any project of overriding public interest (if no viable alternative is available) may be permitted even if the EIA is negative (BNatSchG, 2009: §34). While neither the German law nor the Habitats Directive specify "overriding public interest", resource security is commonly included (van Mäßenhausen, 2016). In addition to (and beyond) legal requirements, reputational risks have led Rhinish coal operators to restore and recultivate natural and agricultural areas. From the beginnings of their mining operations in the Rhineland over 100 years ago, RWE devoted considerable financial resources on nature recultivation work to gain and maintain a social licence to operate in a densely populated area, I am told by RWE representatives (E3, E5). Today, recultivation work is undertaken by RWE's recultivation research centre in collaboration with the Cologne Bureau for Faunistics and countless volunteers. The research centre is not only responsible for the planning and implementation of RWE's recultivation work but appears to undertake PR and stakeholder outreach, promoting the company's biodiversity management to external parties, student groups and politicians. Although the company has only recently adopted the language of 'offsetting' (following an IUCN partnership and resulting evaluation of its restoration work, explored below), the *Sophienhöhe,* designated offset for the *Hambacher Forst*, is praised for leading to NNL, and even a net gain of trees. The site far exceeds previous rehabilitation and compensation efforts; it has become a restoration laboratory, and plays a crucial role in securing acceptance for 'Europe's biggest hole'.

The newly restored natural area and artificial low mountain range forms the heart of the biodiversity management plan of the Hambach mine. Some of the forested areas are designated for future timber harvesting (Schumacher et al., 2014b; E3, E4), while the area is also used for recreational purposes. The *Sophienhöhe* contains 150km of hiking and cycling trails leading to visitor points on top of the hills and different 'eye-catchers' including a Celtic tree circle, look-outs and a 'giant redwood trail' as well as, initially, a moufflon wild park. In addition to RWE's regular guided tours through the *Sophienhöhe*, the company produces maps that can be ordered for free through the RWE hotline.

The offset site promises 'no net loss of trees', an RWE recultivation expert explains, with a diversity of unique ecosystems that has facilitated the return of rare species in the area. These measures exceed legislative requirements: Rather than simply planting cheaper monocultures, for instance, especially spruces, the company has invested substantial financial resources into creating biodiverse offset areas and turning them into recreational areas – even before compensation measures had become mandatory. Despite its rich ecological diversity and newly

created ecosystems – including local biodiversity hotspots and unique biotopes – many argue that the area cannot compensate for the loss of this ancient forest (Jansen, 2012; F1, F2, F3, F4, F5) – "it might take 100 years for the new forests to equal the rich biodiversity of the ancient woodland, particularly the old growth oak stands" (Imboden and Moczek, 2015: 18).

In addition to the *Sophienhöhe*, RWE has implemented additional conservation measures that are designed to offset the loss of *Hambacher Forst*, including a network of bat highways (double-tree lines that attract insects for hunting) that are meant to facilitate the migration of the threatened Bechstein bat into other nearby forests, as well as wooden boxes to catch and relocate the threatened hazel dormouse and other bat-species. These measures form part of RWE's accumulation by restoration, which will be analysed in the next section.

Accumulation by Restoration in the Rhineland: re-building human and nonhuman habitat

Accumulation by restoration, as explored above, denotes the making and securing of profits through recreation, or 'repair' of habitat – both human and nonhuman, as I will be arguing in reference to RWE's recultivation work. This restoration is threefold: it refers, firstly, to RWE's restoration of agricultural areas, which undergo a seven-year process of mixing soils to enable agricultural production following mining activity; secondly, to the company's restoration of 'human habitat' – the re-building of entire towns and villages that were destroyed in preparation of mining activity; and thirdly, to its ecological restoration activities of non-human habitat – biodiversity offsets, such as the *Sophienhöhe.* Each of the associated processes of accumulation by restoration will be explored in more depth, starting with agricultural restoration.

The German Rhineland is one of the most fertile agricultural areas of the country, and large areas of land designated for mining activity were previously used for agricultural production, much of it by smallholder farmers. Some land is being returned to agricultural production following the 'migration' of the mine and the restoration of agricultural land. The latter involves land reclamation and the mixing of arable soils, with clay, sand, loam and humus (topsoil). RWE employees manage the land for seven years, primarily through bur clover planting, rather than food production, with the aim to "activate" the soil (RWE Power, n.d.b: 8). After seven years, the land is trandferred to farmers, who "are never given back the same land they once cultivated, but often fields that are much further away" (H2). The new land continues to be inferior, I am told, "the 'trafficability' is not optimal. You can't drive on it when it's wet" (H2). Only about half of the total recultivated area, however, is turned into agricultural land. By 2016, 32,200ha of agricultural land had been converted for Rhinish mining activity, and only 53%

(12.200 ha) of the 22.800 ha of recutivated areas were returned for agricultural production (Adams et al., 2016: 7). Fig. 23 compares previous land use ("Landinanspruchnahme") and rehabilitated areas ("Wiedernutzbarmachung"), with agricultural land in yellow, and clearly shows the reduction in total area. The red area shows the land area that is currently being mined by RWE; most of which will be converted into lakes (the Hambach lake alone will cover 3750 hectares, Dworschak and Rose, 2009: 17).
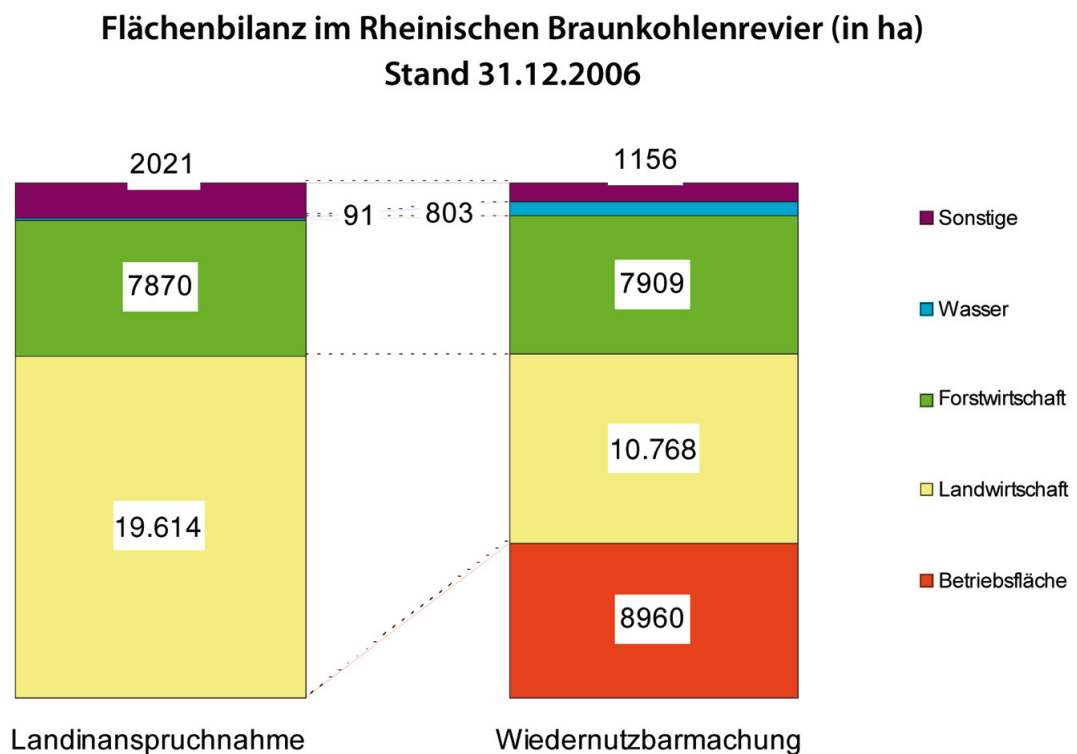
Flächenbilanz im Rheinischen Braunkohlenrevier (in ha) Stand 31.12.2006

Figure 23 Area balance in the Rhinish lignite coal area in hectare (Dworschak and Rose, 2009: 5)

Over the last 150 years, Friedhelp Kamphausen and Klaus Lohde have shown, land clearance for mining has "almost exclusively been at the expense of agricultural use" (2005: 299). Recultivation is negotiated with the Chamber of Agriculture, RWE shareholder, who negotiate agricultural recultivation on behalf of farmers, against nature reconservation interests (H2). "We negotiate for every hectare", I am told.

The big losers of RWE's recultivation are small farmers. In addition to the loss of agricultural land for mining activity, agricultural land is taken out of converted for biodiversity conservation purposes, leading to higher market prices for land that disproportionately affect smaller farmers (Deter, 2013). The result is restructuring of ownership and concentration of land in hands of

fewer larger farmers, a research participant from the Chamber of Agriculture explains (H2, confirmed by Kulenovic, 2016), along with the loss of small businesses, restaurants and craft producers. In one of the resettled villages, the interviewee explains, "we used to have 12 farms. After resettlement, we were left with two or three … Many give up … They have been working on their land for generations, they don't 'warm up' to the new land. Many wait till the coal comes and then they give up" (H2). Those who receive new land – often as far as 30km away – are more limited in their growing options, as some agricultural plants don't grow on the restored soils, and organic agriculture is impossible. Animal husbandry – especially small-scale dairy farming – often became impossible, as the new land farm land was categorised as residential areas (Hennen, 2018). Others wait for years to receive new land (Silberer, 2013). RWE (shareholders), meanwhile, not only profit from their core mining business, but further receive EU agricultural subsidies of 304 Euro per hectare during the seven years of agricultural recultivation, amounting to half a million Euro in 2010 (WDR, 2011), and slightly under 400,000 in 2017, including a "greening premium" of 118,000 Euro, according to the Federal Office for Agriculture and Food (Bundesanstalt für Landwirtschaft und Ernährung, 2017). The company profits directly from its agricultural restpration, at the cost of small farmers.

The second process of restoration involves the re-building of 'human habitat'. As explored above, over 50 Rhinish villages and small towns have been displaced for mining activity over the last century, involving the destruction and relocation of entire villages. These processes have come at great human and material costs, involving the loss of social fabric in communities, as neighbourhoods were ripped apart (Silberer, 2013), and the disappearance of cementories and ancient cathedrals. Local infrastructures disappear first, I am told, including shops and bakeries (F1). Many cannot afford to re-build their houses, because they lived on leased land, and compensation payments for leased land are very low (Hennen, 2018) – in addition to problems with price assessments, valuation processes and time discounting explored above. Others become indebted and forced to rent from RWE (Kirschengens et al., 1985).

The last, and most important, process of accumulation by restoration occurs through the nature restoration processes explored above: the creation of biodiversity offsets, such as *Sophienhöhe*, through its own recultivation centre to enable claims about 'no net loss of trees', as well as through the generation and sale of eco-points, introduced in chapter 1. The former has already been introduced: it involves the restoration of formerly mined land to serve as offsets for the 'migrating mine', and particularly the destruction of the *Hambacher Forst*. The biggest losers in this process are the endangered bats and other forest wildlife, and local communities (especially people who don't own cars) who lose access to the forest. The latter – the

generation of eco-points – illustrates the novelty of the processes particularly well, and should be explained in more depth.

German legislation enables private companies to sell eco-points for enhancing the status of natural areas they own. The 'upgrade' of a spruce forest to a beech tree forest, for instance, constitutes a compensatory measure that can be sold to a developer (Steinbach, 2015). The mining industry is involved in the provision of such compensation areas and has accumulated the ecological expertise and methodologies for this work. In NRW, the agency responsible for the provision of offsets, Landschaftsagentur Plus GmbH, a private enterprise with limited liability, constitutes a joint venture of RAG Montan real estate, daughter company of anthracite mining company RAG and green area management firm HVG. RWE has offered specialist environmental and recultivation services in the past (RWE Technology International, n.d.) and has advised the German government on mine rehabilitation (RWE Power International, 2008). The company sells eco-points generated through nature restoration or 'upgrading' to German municipalities (Hupp, 2016), such as the city of Brühl, located near the three Rhinish mines (Stadt Brühl, 2014). Some of these areas compensate for the expansion of its giant theme park, *Phantasialand*, and the associated loss of forest (Bezirksregierung Köln, 2015; Kirfel, 2013), other areas are used for rewilding projects in collaboration with other actors (e.g. Beckum, n.d.). Eco-points are generated through the 'upgrading' of forests, mentioned above, the conversion of agricultural land into grassland to protect local biodiversity (Stiftung Rheinische Kulturlandschaft, n.d.), or the plantation of fruit orchards (Schröter, 2013). Previously mined areas are sometimes ustilised as compensation areas by municipalities in the Rhinish mining area, against payment to RWE, as for instance the compensation concept for environmental impacts of the city of Hürth shows (Stadt Hürth, 2006). Through daughter company RWW (Rheinisch-Westfälische Wasserwerksgesellschaft, involved in local water management), RWE owns three eco-accounts through which it generates eco-points through reforestation and rewilding work (RWW, n.d.). In addition to eco-points, RWW offers a "complete service" to developers, the company advocates, including "planning and implementation of compensation measures" as well as "long-term maintenance" and "regular monitoring" (RWW, n.d.). Additionally, RWE maintains a number of its own eco-accounts, such as *Villewälder* in Weilerswist (Euskirchen), which are used to offset the implementation of housing projects (Schwarze et al., 2016: 22)

The associated accumulation that is generated through restoration of human and nonhuman habitat and agricultural land is twofold. Firstly, it involves new value creation or capturing through the restoration process itself, e.g. new profit opportunities through the sale of eco-

points, associated environmental services and agricultural subsidies. More significant, however, is the securing and protection of existing (and increasingly 'at risk') (shareholder) value creation against the threat of political decisions to phase out coal. This value creation relies on the legitimacy rendered by restoration, collaboration and new partnerships with ecological groups, conservation organisations and 'nature lovers' (see next section), as well as the spectacle associated with turning mining into tourism experiences, mediating social relations between RWE and mining tourists.

Land restoration, or the compensation of the destruction of habitat that was destroyed for industrial expansion, has historically been crucial for the legitimacy of mining activities. What is new, however, is the role of *neutrality* as mobilising metaphor (Huff and Brock, 2018) – as rhetorical device to legitimise new financial frontiers (Sullivan, 2013a) – and the creation of novel accumulation opportunities based on the 'repair' of habitat, in addition to the facilitatation and legitimisation of ongoing accumulation through destruction. The significance of these processes, I go on to show, not only lies in their 'material manifestation' and the profits realised. The significance of RWE's restoration work, and especially the *Sophienhöhe,* lies in its productive power, its mobilising function as anchor for partnerships and alliances, its place in the eco-touristic development of the mine, and its role in capturing imaginations through novel imaginaries and narratives of sustainable coal mining. RWE mobilises these narratives to re-shape the past and create a better future, and to establish itself as good corporate citizen and responsible neighbour – through the use of 'spectacular conservation' (chapter three), and narratives around better nature and a better future, effectively managing and pre-empting dissent and maintaining a favourable regulatory environment. I will develop these points in the remainder of this chapter.

Green(wash)ing RWE and co-opting nature lovers – partnerships and collaborations around nature restoration

Biodiversity offsetting, I have argued throughout this dissertation, can serve to co-opt critics and divide-and-conquer resistance. This section illustrates the place of RWE's restoration work in the management of critique; it contextualises offsetting within the company's greening efforts and analyses its role as anchor for a conservation partnerships and stakeholder dialogue. RWE's restoration work plays into the discursive greening of RWE's operations and their positioning as 'sustainable' and good corporate neighbour. As part of their large PR campaign "voRWEg gehen", a wordplay that translates into "leading the way", the company has been trying to establish itself as environmental leader causing controversy in 2009 when their advertising clip (RWE, 2011) suggested significant investments into renewable energy, when at the time only

2.7 percent of their energy was based on renewables (Lobbycontrol, n.d.). Wind energy, featured prominently in the video, only contributed to 0.1% of the electricity it produced, and none of the six tidal power stations that were displayed in the video had actually been built (Lobbycontrol, n.d.).

While offsetting is part of this greening exercise, it goes beyond it. In previous chapters I explored the importance of offsetting as anchor for corporate conservation partnerships, which are central for the mining industry and its social licence to operate – for their ability to lend credibility to the industry's conservation work, to silence and co-opt critics and to divide the environmental movement (chapter four). Partnerships represent a "'stakeholder' form of politics, which obscures the existence of underlying social conflicts" (Newell, 2008: 523). To manage these conflicts, many mining companies have recruited leading NGO representatives and academics into their stakeholder boards or advisory councils. RWE is no exception. Its collaboration with conservation NGOs is institutionalised at different levels – internationally (through the Bettercoal Initiative introduced in chapter five), on a company-level (through its IUCN partnership, and other partnerships with German NGOs and government bodies), as well as locally, through partnerships with nature volunteers and the *Kölner Büro für Faunistik.* The company has enrolled two very prominent German environmentalists on its Corporate Responsibility Stakeholder Council: Christoph Bals, director of Germanwatch, and Professor Manfred Fischedick, vice president of the Wuppertal Institute for Climate, Environment and Energy. In its leading role in the Bettercoal Initiative, RWE claims to promote corporate sustainability in the international coal supply chain by auditing and stakeholder engagement. Campaigners, however, criticise RWE for 'outsourcing' their responsibilities to divert attention from their destructive operations, I am told by a member of a mining NGO (D5). The secret nature of the internal audits and their outcomes and the "forward-looking approach" of "continuous improvement", which allows for ignoring the corporate crimes committed by RWE's supply partners, make for what one research participant describes as a "perfect greenwashing tool" (D5). In the run-up to the 2013 World Economic Forum in Davos, RWE announced a controversial biodiversity partnership with IUCN, which involved a study of RWE's biodiversity management and restoration work around the Hambach mine. The study recommends:

> *biodiversity loss is a risk factor to the company. However, if projected risks are managed properly (e.g. on the basis of the mitigation hierarchy), they can often be turned into opportunities to provide positive outcomes for biodiversity … such management methods can improve the company's "social license" to operate (Imboden and Moczek, 2015: 3).*

To reduce reputational risks, it recommends better communication and interaction with stakeholders, and additional biodiversity offsets embedded in NNL logic and application of the mitigation hierarchy - despite recognition that offsetting measures "will never reach the biodiversity status of a mature forest" (Imboden and Moczek, 2015: 15-18). The report further advocates turning investment risks – diminishing raw materials, civil society concerns, access to capital, reputational harm – into profitable business opportunities including 'branding' opportunities, pre-empting regulations and public pressure (Imboden and Moczek, 2015). The partnership was widely criticised by German IUCN member organisations, and has not been renewed (E3; IUCN, n.d.). As a consequence, RWE established a new biodiversity policy in which offsetting is further institutionalised through its commitment to IFC performance standard 6 and (for the first time!) the use of the mitigation hierarchy and the NNL concept (RWE Group, 2016) – the idea that RWE has been using to legitimise its operations for many years (i.e. 'we plant more trees than we cut down'), but had never publicly formulated as such.

Locally, RWE engages with numerous local volunteers and conservation organisations, collaborating in biodiversity data collection and inviting them to their restoration conference, where their work is showcased, publicly acknowledged and applauded. This work, and the data they collect, is important to the restoration success, I am told, and RWE's recultivation centre entertains close contact and personal relationships with these groups and individuals (E4, E5). In return, conservationists abstain from criticising RWE's coal mining operations and the cutting of the *Hambacher Forst* (personal communication with conservationist).

At the same time, RWE (re)produces narratives that serve to naturalise its activities and its place in the Rhinish political economy. This will be explored in the next section.

Capturing imaginations: naturalising coal extraction, naturalising RWE, naturalising citizenship

In the previous section I touched on RWE's narratives of social and ecological responsibility and stewardship around its mining operations. In these discourses, the impacts and the risks of coal mining are normalised and naturalised "as the inevitable consequences of modernity" (Kirsch, 2014: 1), or so-called 'civilisation'. The legitimisation of coal mining is based on three main narratives, invoking particular fears and sentiments: firstly, the necessity of coal for energy security (with renewed impetus after the political decision to phase out nuclear electricity production); secondly, coal being a 'domestic' energy source for the 'domestic' market, and thirdly, the role of coal as source of employment and prosperity of the region (e.g. RWE Power, 2013a – but also, for instance, in its teaching material). This discourse helps positioning coalmining as a matter of 'national interest' – fundamental to allow for displacement and

resettlement and to override environmental concerns. Each of these messages deserves some attention.

The positioning of coal as indispensable for energy security constitutes a particular form of securitisation of the energy (discourse) that is particularly influential in policy circles and the media. To nourish these fears, RWE commissioned a study on "supply security" from the (pro-business) Cologne Institute for Economic Research that was published in 2015 (IWKöln, 2015). Its PR appeals to fears of sitting 'in the dark' – when the wind stops blowing and the sky is clouded (RWE Generation, 2015). Already in 1979, a regional politician criticised, the company operated with "alarming news and horror images"; warning of blackout if no new power plants were built (Spiegel, 1979). Today, these fears are based on the 'unreliability' of renewables, warning of weather-related blackouts, while positioning coal as modern, reliable and "intelligent, flexible partner of the renewables" (RWE Generation, 2015: 3).

The second message around the domestic nature of coal plays into economic nationalist discourses, invoking fears of dependence on foreign, potentially 'less democratic' countries and markets – although the European electricity grid is already so closely integrated that electricity is being imported and exported across boundaries. Germany is currently a net exporter of electricity, exporting some 10% of its electricity, mainly produced through the burning of coal (Agora, 2016: 1). This plays into the historic image of mining as 'traditional' and fundamental to the post-war economic recovery. "Mining is what helped us recover and rebuild after the war", an interviewee explains, "that makes it very difficult to criticise" (F3). These sentiments were particularly important at the time of permit approval for the Hambach mine amid the oil crisis. From the beginning, I am told by a regional government informant, the Hambach mine was a "political project", triggered by political fears of the increasing dependence on foreign oil imports, ignoring social and ecological concerns (H2). The interviewee continues: "The Hambach permit was approved in no time … people didn't think that species protection would come to play such an important role … that there might by legislation on it" (H2).

The third PR message around employment and prosperity is based on invoking fears of *deindustrialisation*, triggering images of the dark ages and pre-industrial primitivism. This discourse of civilisation, modernity and backwardness is frequently invoked by the mining industry across the world, often vis-à-vis indigenous concerns and local resistance. This is exemplified, for instance, in the words of former president of the industry's trade union, then-MP Ulrich Freese, who recently warned of the "end of the welfare state" (in Greuling, 2015). In his 'sustainable mining vision', mining engineer Ajoy Ghose claims: "Mining is, was and shall

continue to be the cornerstone of human civilization … without mineral raw materials human race literally regresses to a caveman existence" (2009: 2). Mining, in turn, is associated with (technological) progress and modernity, with conquest over nature, and engineering dreams. RWE's promotional material – and the mining-eco-tourist infrastructure explored below – appeal to this fascination with big machinery symbolising modernity, showcasing its huge diggers, the "largest mobile machines of the world" (RWE Power, 2013b), steered through the most up-to-date GPS technology (RWE Power, 2014). Coal mining itself is naturalised both by embedding it historically, highlighting its long history in the region, as well as geologically, emphasising its naturalness. "It's a natural product, just dead plants", I am told repeatedly when participating in RWE's guided tours. Such rhetoric suggests, Stuart Kirsch argues, "that the 'actions of the mining companies, while not themselves natural, are fully compatible with natural processes, and the resulting damage is either slight, irrelevant, or self-correcting if left to 'natural' processes'" (2014: 139; referencing McEachern; see also Evans, Goodman and Lansbury, 2002). This renders possible absurd political claims about coal constituting a 'renewable' energy source, making coal phase-out obsolete – as overheard more than once by visitors of the mine – and effectively naturalising the mining process itself, while downplaying its social and ecological impacts.

Not only are coal mining and dependence on coal electricity naturalised as outcomes of human 'progress' – similarly, the growth of RWE, its close political ties, its previous monopoly over German electricity production, but also its hegemony in the Rhinish employment market and local dependence on the company are presented as a 'natural order'. Yet, RWE has for decades lobbied hard for lower taxation and against the establishment of alternative sources of employment in the region (and continues to lobby on all levels of governance). In the 1950s, two interviewees report, RWE prevented the establishment of the automobile industry in Bedburg, a small town close to the neighbouring Garzweiler mine, to cement the town's structural dependency on RWE by exercising pressure on the town government (F2, F3). These processes of naturalisation and establishment of RWE as responsible neighbour and *citizen* – a native or naturalised *member* of a state or community who is entitled to rights and protection – are achieved through positioning itself as 'giving back' and as 'belonging'. The former – responsible neighbour – is achieved through employment, CSR projects, recreational infrastructure and recultivated 'new nature'; while the latter implies being anchored not only in the political and geological landscapes but also in the cultural landscape, through sponsoring of arts projects, concerts, recreational infrastructure and historic monuments such as *Pfaffendorf castle*, that has been turned into a PR site. These strategies represent what Dinah Rajak has

called the "performance of corporate virtue" (2011b: 10). Whereas she analyses the CSR regime as the reinvention of "old regimes of corporate paternalism … within a modern morality of social responsibility" (2011: 10), the idea of corporate citizenship, I suggest, now serves to replace that morality with a social order in which the corporation is a valued member – *citizen* – of the community within which it operates. With these social responsibilities, in the era of corporate citizenships, comes a bundle of new *rights* and *entitlements*. Notions of responsibility tend to assign power to corporations to define their own conduct, covering up "the power relations which the seemingly benign language of 'responsibility' and 'citizenship' seeks to deny or obscure" (Newell, 2005: 542). The idea of citizenship, Roger White has argued, "has historically been a construction of property owners as a way to exercise privilege and power over poor migrants, and religious and racial minorities" (2004: 12). Corporate citizenship also goes beyond the idea of corporate personhood, attached to the enjoyment to certain human rights, in its association of belonging and civic duties. While the notion of citizenship implies a corporate responsibility to re-pay communities, Peter Newell argues,

> *the range and level of obligations they are expected to fulfil are largely left to their discretion. The power to define the rights and responsibilities that underpin a social contract is not shared. Because in many settings companies have greater bargaining leverage and enjoy the backing and support of governments, the space for communities to contest rights and responsibilities is restricted (2005: 546).*

The idea of legal personhood, recently confirmed by US courts, is rooted in the very idea of incorporation, "to give substance or material form to something, to embody it" (Paul, 2011). It goes back to the British East India Company, incorporated by English royal charter in 1600, instrumental in the establishment of British colonialism and later functioning as governing bodies in the colonies (Paul, 2011). The concept of corporate citizenship gained traction after 1996, when US president Clinton invited a number of business leaders to discuss corporate citizenship and social responsibility, urging them to "do well" while making money for their shareholders (Carroll, 1998). Being a "good corporate citizen", according to Archie Carrell, includes to be profitable, to obey the law, to engage in ethical behaviour, and to give back through philanthropy (Carroll, 1998: 2). The concept has since been adopted by the World Economic Forum, and the UN (UN Global Compact, 2012). RWE is proud to be

> *actively embracing its role as "good corporate citizen" by upholding its commitment to social responsibility. In addition to the RWE Foundation and the voluntary "RWE Companius" initiative, regional projects and classic sponsoring also play an important role when it comes to projecting the image of RWE not just as a successful company, but also as a good neighbour (RWE, n.d.d).*

RWE is an active member of the CCCD – the German Centre for Corporate Citizenship – a business think tank that advocates corporate citizenship in Germany, as "the cornerstone of a New Social Contract" to "systematically connect … business goals and common good interests to create a win-win strategy for both business and civil society" and put them onto the political agenda (CCCD, 2010). Good corporate citizenship, according to RWE's corporate homepage, is based on good neighbourhood relationships and continuous dialogue with "all societal groups", and is manifest in local engagement and its "widely recognised high-quality recultivation efforts", RWE's CSR department states (RWE Power, 2013b). Recultivation work, including offsetting, is fundamental for 'giving back' and being accepted as a good corporate neighbour, I am told by an RWE interviewee (E4); complemented by (and promoted through) dialogue, information and open discussion (RWE Power, n.d.a). This includes consultation processes where "citizens [can] ask questions about the process [of mine expansion] and voice concerns" (RWE Power, n.d.a) – without any commitment by RWE to act on these concerns.

The consequence of these 'naturalisation processes' is that RWE – just like the transnational corporation in the global political economy – has become a 'taken-for-granted actor' in the Rhineland, further "naturalizing a certain ontology, a world in which personified entities called corporations exist—entities with volition, agency, and moral judgment" (Foster, 2010: 99). This naturalisation goes beyond mere greenwashing. It legitimises and intensifies accumulation processes, and constructs corporations as benevolent citizens, bringers of prosperity and saviours of natural environments. The granting of citizenship has historically been politically contested (e.g. to non-white people or women) and points to the crucial role of the state in enforcing corporate 'rights', legitimising RWE's operations and suppressing resistance. Ultimately, it is the state who grants citizenship and builds regulation 'for' rather than regulation 'of' business (Newell, 2001), and the ontology described above relies on the state as ultimate authority, playing an active role in protecting citizens' (= RWE's) rights, e.g. by protecting their logging operations as explained above. The naturalisation of RWE's operations, and ultimately its own role in the Rhineland, is complemented by its efforts to shape the memories of the past, and imaginations of (a better) future.

The spectacular (re)-imagination of a better future and a better nature

RWE's discursive work to naturalise its operations, and the imaginations of a 'better future', which will be explored in this section, need to be read against the 'threat' of the energy transition and the end of coal, but also a certain German nostalgia, romanticism and mythological attachment to (ancient) forests. Instead, RWE promotes a medium-term future

with coal, harmoniously co-existing with the slow (corporate-controlled) expansion of renewable sources of energy and the creation of a 'better nature' to compensate for the destruction of the *Hambacher Forst*. To analyse the role of imaginaries in RWE's corporate messaging, it is useful to go back, once again, to Guy Debord's spectacle, and Jim Igoe's work around the importance of images, not only in "shap[ing] people's perceptions of the world, but [in] mediat[ing] social and human-environmental relationships … in late capitalism" (2010: 375). I see these imaginaries as part of RWE's efforts' to 'remake nature' and transform (the image of) nature from coal to windmills as part of corporate-driven 'spectacularisation of conservation' (chapter three). As explored in previous chapters, spectacle imposes a sense of unity in situations of fragmentation, legitimising and justifying the hegemonic system and stipulating consumption as the (only) way of engaging with the world. It is grounded in the presentation of the world as quantifiable and commensurable, creating the appearance of exchangeability while concealing conflicts and contradictions, reifying the same conditions and relationships it is based on (Debord, 1967). It is further intensifying the alienation among humans and between human and nonhuman nature that offsetting plays into. It is these relationships between people, RWE and our (natural?) environment that I am interested in here; the way that RWE is incorporating the surrounding, shaping it and using it for rendering a positive image of its operations – and mediating people's relationship to coal itself. Spectacle involves, in the Rhineland, the strategic positioning of windmills around the edges of the mine (figure 23) and the RWE-sponsored plantation of the last decades' 'trees of the year' along the new highway along the edge of the mine (figure 24), both of which serve to signal its environmental stewardship and responsible behaviour, caring about the climate, and caring about educating those who drive past its mining operations.

Figure 24 Windmills at the edge of Hambach mine (own photo)

Figure 25 RWE-sponsored 'trees of the year' along the dislocated highway (own photo)

But even RWE's offsetting work becomes subject to spectacularisation, exploited for advertising purposes. It is visible in its aforementioned promotional video – screened in cinemas and national TV – where RWE appears as self-proclaimed 'energy giant' (recurring in much of its advertising material) that resembles Shrek. The energy giant has trees growing on its shoulders, 'plants' windmills and tidal power stations, but more importantly moves mountains, plants trees, sows plants and rolls out lawn to create the 'better nature' that will be analysed below (figure 25).

Figure 26 Energy giant RWE restoring nature, screenshot of RWE's promotional video (RWE, 2011)

These three spectacular performances of sustainability contribute to RWE's corporate display of good guardianship and responsible citizenship, once again remaking the (human) landscape and communicating the reconcilability of sustainability and coal. The windmills, representing a different kind of progress and modernity in times of energy transition and climate change, thus simultaneously serve as compensation measures for the mine (concealing the equally, if not more ecologically disastrous mining operations and displacement required elsewhere for the precious metals necessary for these windmills, Dunlap and Brock, forthcoming). Both the tree line (figure 24) and the friendly giant (figure 25) remind the passing passenger and the cinema-goer, respectively, of RWE's ecological concerns and commitment to recultivation work, creating a sustainable future.

The most interesting example, however, is *:terra nova*, the information centre overlooking the mine that I introduced above, embedded in an artificial dune landscape. The resort-style beach landscape is no coincidence. RWE's long-term management plans indicate that after the proposed mine closure in 2045, Europe's 'biggest hole' is meant to be turned into Germany's second largest lake by the end of the century. "It is supposed to look like a shoreline", explains RWE employee Guido Johnen (in Wonnemann, 2013). This attempt to turn the present mine into a future lake attempts to do just as their slogan proclaims: "looking into the present and the future", creating a "positive" landscape, not looking backwards, because "looking backwards can be painful", as chief architect Dirk Melzer explains (Melzer, n.d.) – especially for those who experienced displacement because of the mine. The sunbeds and parasols, he explains, are "invitations to wait for the water" (figure 26). RWE attempts to market the re-imagining of the future, constructing a win-win solution where coal mining leads to a better life and, importantly, "better nature", with a new lake and commercialised recreational

opportunities waiting at the end of the mining tunnel. These new infrastructures are intimately tied to RWE's greening efforts and claims of ecological sustainability, representing the neoliberal belief in consensus and seductive win-win solutions, based on the compatibility of capitalist growth and ecological sustainability (Büscher et al., 2012) – but also the capturing of imaginations founded on the erasure of the interconnectedness of natures, spaces and previous inhabitants (human and nonhuman) and the projection of new, artificial and mediated relations. This erasure and reconstruction of interconnection is a discursive and practical act of violence that is being invisibilised by RWE's attempts to "green" mining.

Figure 27 Waiting for the water (Merzer, n.d.)

Not only does it hold the promise of a better future, a future where people will be able to enjoy the recreational opportunities that RWE is providing for them (just as most lakes in the Rhineland are former mining sites that have been restored to create recreational opportunities including swimming, cycling and water-skiing). But at the same time, it resembles the political 'threat' (or promise) that RWE has been able to institutionalise in the political arena, nationally and especially in the NRW parliament (and constantly reiterates in its publications): coal is *still* the future – coal will be with us for a long time. This present and this future are to be consumed through the commodified 'enjoyment' of the view over the mine, connected – physically through a 'jetty' (figure 27) – to consumption of food, drinks and football-golf, but also beautifying visitors' relationships with RWE.

Figure 28 The jetty connecting the restaurant with the shore (Merzer, n.d.)

In combination with the diversity of recreational opportunities – regular tours through mines and power stations, cycling and hiking infrastructure, guided hiking tours through *Sophienhöhe*, exhibitions and museums, cultural events and the multiple attractions that can be found in the offset site (including the Celtic tree circle, viewing points, 'giant redwood trail', and showcased wildlife[49] mentioned above) – *:terra nova* constitutes an "extractive attraction" (Brock and Dunlap, 2018: 40) that plays into RWE's transformation of coalmining into a (eco)tourist experience. The spectacle of extractive attraction works to further normalise the mining processes that are being militantly resisted. In Uganda, Connor Cavanagh and Tor Benjaminsen have shown, 'spectacularisation' is fundamental in the production of carbon offsets that form a "process of interrelated accumulation and naturalization by dispossession" (2014: 56). In the Rhineland, *:terra nova*, *Sophienhöhe* and the new 'energy route' attempt to do the same by solidifying a unifying message, justifying the operation and encouraging people to participate as spectators, while further commodifying and selling the mining experience. Now parties rage (occasionally) and beer glasses cling over electrical humming and grinding gears of mining operations, bundling the 'ecotourism-extraction nexus', where extraction becomes integral to eco-tourist experiences (Büscher and Davidov, 2013), into one operation – mining tourism.

The 'spectacular' mining tourism infrastructure around the Hambach mine helps invisibilise the violence required by the mine, and mediate and transcend the assumed contradiction between ecotourism and extractive industries. *Sophienhöhe* and the extensive network of cycling and hiking paths appease people's love for forests, while *:terra nova* and other recreational-educational sites romanticise notions of coalmining, providing an outlet for fascination with huge machinery that epitomises industrial progress, modernity, and human mastery over nature. This accommodationist philosophy manufactures a 'win-win' for hikers, cyclists,

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[49] The wild animals have all died or been removed at the time of writing.

conservationists and mechanical enthusiasts, establishing a self-reinforcing and inclusive approach that not only merges, but simultaneously articulates the ecotourism-extraction nexus.

The successful mediation of this relationship and the different interests – ecological, social, economic – contribute to Guy Debord's "omnipresent justification of the conditions and aims of existing systems" (Igoe, Neves and Brockington, 2010: 492) – a capitalist industrial system based on social and ecological injustice and exploitation, encouraging consumption as (the only) way to relate to one's surrounding. It plays into RWE's re-imagination of a future where coal is compatible with social and environmental responsibility and the creation of a better life – and a better nature. The creation of a better nature is best captured in this quote by one of my RWE interviewees:

> *The great thing is … that the restoration work is better than [what was there] before. We can plan a new landscape … It's a unique opportunity ... We can accommodate all interests (E3).*

The recultivated *Sophienhöhe* is meant to lead to a 'net gain of nature'. Indeed, RWE derives legitimation from its claims that the company has "planted more trees that it had to fell", a research participant explains (E3) – over 10 million new trees in the past three decades (RWE Power, 2014). While marginalising and naturalising forest *destruction*, RWE sees this as an opportunity to *improve* nature: "intervention in the natural world is an inevitable part of what RWE does, which is why we go out of our way to preserve and *upgrade* the habitats of native flora and fauna wherever possible" (RWE, n.d.e, emphasis added). This trust in the company's capacity to engineer and remake nature for their own purposes is grounded in what James Scott describes as "high-modernist ideology", characterised by overly optimistic

> *self-confidence about scientific and technical progress, the expansion of production, the growing satisfaction of human needs, the mastery of nature (including human nature), and, above all, the rational design of social order commensurate with the scientific understanding of natural laws (1998: 4).*

The very idea of the 'forest', Nancy Peluso and Peter Vandergeest have shown, is the outcome of legislation, zoning, mapping and classification processes, subject to management by professional services (2011). German forests are highly regulated and mapped spaces, subject to management procedures, rules dictating visitors' behaviour and prohibiting activities. They are cut through by designated trails for hikers, cyclists and horse riders, roads, car parks, high-speed train infrastructure, and electricity grids; with a multiplicity of different signs and symbols, to assist and regulate activity. Most forests are commercially exploited, and forest owners constitute a powerful lobby at the national and European level. James Scott (1998) has

illustrated the transformation of nature into manageable natural resources, based on the utilitarian logic of efficient utilisation, that forms the basis of German scientific forest management – geared towards profit maximisation and control – which later spread around the world. The *Sophienhöhe* is not just a human environment – it is a corporate-controlled and pre-planned recreated environment, designed to maximise biodiversity and recreational opportunities. Some trails are equipped with info-boards with QR codes, for smart phone equipped visitors—allowing people to learn via LCD screen about "the new landscape and its flora and fauna" (RWE Power, 2016). This information technology-approach mediates the 'visitor's' relationship with their natural environment, but also with the company, creating a corporate version of what Bram Büscher has coined "Nature 2.0" (2016). Hiking paths through the *Sophienhöhe* are not only heavily signposted but delineated by bushes that keep the visitor on the path, resembling what Jeff Ferrell (2012: 1688) calls "spatial environment[s] saturated with contemporary ideologies of containment and exclusion". Policing takes place through signs, rules and 'natural grids', but also through visual clues that promote self-identification with the project and hiking regulations and through policing each other, reminding each other not to leave the trails. Individual agency or exploration beyond the pre-planned trail is discouraged. *Sophienhöhe* thus becomes a highly regulated, predictable and enclosed environment – like city parks positioned to serve as PR. It is fundamentally *exclusive* on a deeper level, in that it 'outsources' the nature experiences that the people from Buir, the village adjacent to the *Hambacher Forst* could experience by simply leaving their front doors, and made it accessible only to those who have the time and motorised vehicle to drive around the mine in the first place.

RWE's recultivation and compensation work, which the company praises as 'exemplary in the world' is taking this belief in the ability to engineer, recreate and control ecosystem service development to the next level – visible not only in the *Sophienhöhe*, but also in their plans to turn the Hambach mine into an enormous lake following mine closure (made possible through offsets, which mean that RWE can break its obligation to restore the mining area to its previous state). The lake is designed to occupy an area of 4000ha, up to 250m deep and meant to be filled, over a 40-year period, with four billion m^3 of water, diverted from the Rhine river. The river ecosystem is scheduled to be finished by 2080, although the feasibility and safety of these plans is questioned by ecologists[50] (BUND, n.d.; F1, F4).

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[50] Specifically, they have raised concerns whether the rise of the ground water to original level might lead to drinking water being polluted by the toxins released during mining activities.

The connection of 'leading' restoration practice with the mining industry is especially interesting here – and not a coincidence. Not only is the mining industry particularly dependent on access to land, and in need of a licence to operate, but it is an industry that is particularly characterised by mechanisation; an industry that shifts more soil than any other sector; an industry that has 'mastered' the domination of nature – and an industry that has historically *celebrated* this mastery of nature. Jeffrey H. Michel's (2005: 18) portrayal of the nature of mining and the mining of nature in the Rhineland is worth quoting at length:

> *Finite resources of coal and mineral deposits are considered expendable for sustaining the mining guild, whose tradition of self-confident rationalization has been captured in a slogan that resounds throughout the industry: "I am a miner. Who is more?" (Ich bin Bergmann. Wer ist mehr?). This robust profession is outfitted with suitable artifacts of masculine sensual gratification, from churning machinery and billowing smokestacks to the violent disfigurement of landscape that is reminiscent of World War I battlefields... The unconstrained virility implicit to penetrating the bowels of the Earth was captured by Friedrich von Hardenberg in his "Song of the Miner" (Bergmanslied) in 1802: A miner, the "Lord of the Earth" (Herr der Erde), becomes passionately enflamed in the depths of the mine, as if that were his bride (Und wird von ihr entzündet, als wär sie seine Braut).*

Offsetting and recultivation – indeed, the very need to conserve nature – may be belittled or ridiculed by the miner, just like climate change is still considered a myth by many RWE employees.[51] Yet, the assumptions and underlying ideas of restoration – the belief in the human capacity to recreate nature and create 'functioning' ecosystems over 50-year periods – are remarkably similar to the characterisation above – the trust in rationalisation and mechanisation, and the ability to 'play god' and reshape the earth according to one's liking. Even the RWE engineers and recultivation experts have had to realise the limits to their almightiness: *Sophienhöhe* experienced a number of landslides, requiring additional shifting of earth, and RWE had to close down its moufflon park because the animals kept getting ill. This is not to say that 'old nature' – such as the *Hambacher Forst* – was not shaped by humans. The forest was always a use forest, providing firewood for surrounding communities for thousands of years, and has been the source of mythmaking around its origins. The forest, and the stories surrounding it, have shaped the cultural history of the region. This uniqueness and the history of the forest distinguish it from the recultivated *Sophienhöhe* and get lost in the commensuration and homogenisation necessary for offsetting.

The creation of equivalence and commensurability starts in the process of mapping, visible in the two maps inserted below, both taken from RWE's conservation concept for the management of the Hambach mine (*Schutzmaßnahmenkonzept*) (RWE Power, 2013c). In figure

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[51] I repeatedly witnessed remarks which demonstrated this during participant observation at RWE mine tours, the RWE recultivation conference and in conversation with RWE employees.

28 we can see how the ancient forest (in the centre of the map, clearly 'in the way' of the mine) and the artificial ecosystem (top left, in the shape of a half-moon) become indistinguishable – topographically and ontologically 'flattened' (Sullivan, 2017a), and reduced to mere surfaces in the same shade of green.
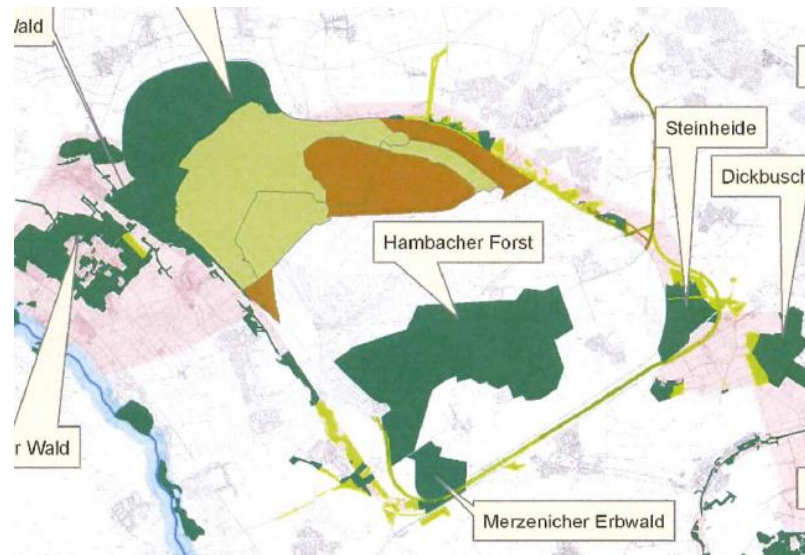
Figure 29: Map of the mining area from Schutzmaßnahmenkonzept (RWE Power, 2013c)

On the next map (figure 29) *Sophienhöhe* (now in brown) is reduced to a 'mitigation measure' for bats and other species and given points in the "impact balance sheet" – and the *Hambacher Forst* disappears altogether – just like the human settlements that have already been displaced or are expecting displacement in the next few years.

Figure 30 Map of the mining area with designated offsetting areas (RWE Power, 2013c)

These maps, and the ontological flattening involved in their creation and usage help create the image of the "migrating mine", as RWE claims (e.g. in its mine tours, the Pfaffendorf exhibition

and in personal interviews, E3, E4) – or as "a hole that migrates through the landscape". On its website, the research centre recultivation describes: "First come the diggers... then nature returns" (Forschungsstelle Rekultivierung, 2016; figure 30). Underlying its wider PR material as well as these maps – only slightly more differentiated in personal communication – is the assumption that, at the end of the day, soil is soil and tree is tree. This facilitates the legitimisation of the mine as 'temporary use of the land' and the (widely spread) claim that the mine will leave no permanent impact. All disturbance, it is claimed, is purely temporary – a claim that is difficult to counter. "Maybe in 12,000 years, Sophienhöhe will be like the *Hambacher Forst*", a research participant states, "but not any time soon. And even then – it will always be an artificial forest" (F3).

Erst kommen die Bagger...   ...dann kehrt die Natur zurück

Figure 31 "First come the diggers... then nature returns" (Forschungsstelle Rekultivierung, 2016)

When looking at aerial images of the forest, or walking through and experiencing both forests first-hand, the differences become apparent (figure 31).

Figure 32 Arial image of the Western side of the Sophienhöhe (top right), adjacent old-growth forest (bottom left) – the Hambach mine begins on the right side (RWE Power, 2013c)

"It doesn't have a soul" is how two interviewees describe the offset area (F4, F5). The *Hambacher Forst*, on the other hand, I am told, is "full of history". In recent years, the violence in and around the forest have shaped the forest and its meaning among residents and activists, turning it into a symbol for resistance – a "political forest" (Peluso and Vandergeest, 2001). The forest occupation – now inseparable from the forest itself, and frequently referred to as "the forest" – has had an impact on how many people relate to their environment and each other, creating new social relations and ways to engage with each other by striving to "live differently" (G1

6.6.   Conclusion – cheap electricity and better nature

RWE's offsetting work is fundamental to the multiple strategies of co-optation, pacification and (violent) oppression of dissent and resistance against coal mining in the Rhineland. The criminalisation as '(eco)terrorists' helps create the culture of fear that in turn contributes to the legitimisation of violence by police and security forces. The violence is invisibilised by the numerous soft strategies, within which offsetting is embedded, creating the image of RWE as good corporate citizen, but also new dependencies and undermining people's ability to make "political demands which may threaten continued 'goodwill' on the part of the company" (Newell, 2005: 547). Meanwhile, the displacement of entire villages increases social fragmentation and alienation from each other and the land. Coal mining – and its social and ecological 'costs' – are further normalised, while RWE's role in shaping the physical, political, cultural and social environments in the Rhineland and beyond is further entrenched. The German state is intrinsically tied to fossil fuel interests, large-scale energy projects and infrastructure provision, having to defend such "critical infrastructure" projects at all costs (Europol, 2016: 8). It is no coincidence that "protests, vandalism, 'blockades and "lock-ons"' against resource extraction companies and large-scale infrastructure" are singled out in Europol terrorism reports (2016: 43), branding anti-capitalist, animal, anarchist and environmental social movements as 'extremist' and 'terrorist' (Europol, 2016). This classification has justified surveillance and the use of undercover police and informants (Monroy, 2011; Lubbers, 2012; Williams, Munger and Messersmith-Glavin, 2013). The mine is 'defended', however, not only by state/security forces and the media, but also by those who are captivated by ideas of progress, modernisation and the green economy, having learned to hold dear the comforts gained and the 'promise' of good, 'honest' mining jobs.

RWE's offsetting work can neither be reduced to a 'greenwashing' exercise nor can it be explained as rollout of neoliberal market-schemes for the governance of nature or the continuation and intensification of financialisation. It is integral to the very operation of the mine and plays a fundamental role in the management and engineering of consent and disciplining of dissent against coal mining in the Rhineland – a *social technology of governance*. It has become a source of power and plays a fundamental role in its licence to operate, while invisibilising the destruction and violence explored above. Based on state support and the structural dependence of local state actors, this contributes to the further legitimisation and entrenchment of corporate and police violence against activists, residents, nonhuman nature and the planet itself. The strategies that I outlined above are inherent to corporate business strategies to deal with – and securitise against – regulatory and reputational risks. This particular securitisation is directed against resistance and helps turn coal into a (national) security issue.

Analysing these strategies helps identifying the productive power and concrete instances of agency involved in offsetting. This avoids invoking and reifying this nebulous concept of 'the market' by not taking for granted its role as start- and end-point of the analysis of processes of financialisation of nature. Consequently, "the market" is demystified and understood as a 'rhetorical device' that plays a discursive role in the managerial governance characteristic of, and the resilience of neoliberal capitalism and its ability to turn risks into profits, but has no agency on its own. This allows us to go 'deeper' in the analysis of offsetting and how it re-configures and entrenches human-nonhuman relationships based on separation and alienation – accompanied by loss of connection caused by displacement. *Sophienhöhe* transforms nature into a destination, separate from ordinary human life and re-sold as a single serving experience between work weeks, while the earth is mined and old-growth forests are destroyed.

The intensification of control through the further domestication of nature, making nature legible and manageable, and its instrumentalisation for capitalist purposes is inherently political. "The political imposition on nature by the corporate/state", Alexander Dunlap and James Fairhead argue, "creates 'forests controlled' as opposed to 'jungles wild'" (2014: 942). This is the very process that the *Hambacher Forst* resistance is formed against. Whereas historically, colonial forestry was fundamental to the legitimisation of the state and the development of new forms of state power (Peluso and Vandergeest, 2001: 763-4), here, corporate forestry – meant to offset forest cutting – plays a further role in the intensification and invisibilisation of (state-backed) ecological conflict, of corporate environmental disaster, and the inherent contradictions of the 'green economy'. Historically, forests were fundamental for *state building*

processes – the *Sophienhöhe*, in contrast, is contributing to *corporate citizenship building.* As a privatised commodity under corporate management (to be 'returned' to the public in the future), the forest becomes part of that social order that legitimises the mine, expanding human politics onto this land. It legitimises and protects not only RWE's role in ecological and social destruction but further facilitates processes of accumulation by restoration (Huff and Brock, 2017). Through impact mitigation and compensation regulation, nature policy more generally (and lack of regulation when it comes to climate change policy), the granting of permits and financial and ideological backing, this legitimisation is backed by (and relies on) the state. The role, or complicity, of the state in the Rhinish coal mining is widely critiqued and constitutes a major source of frustration for residents and activists, illustrated in this graffiti on one of RWE's (eco)tourist information boards denouncing the actions of RWE and the state (figure 32). Its writing translates as '[go] to hell, RWE' and 'father state you son of a bitch'.

Figure 33 Graffiti near the Hambach mine (own photo)

This corporate control represents not only an ever more utilitarian-economic outlook toward nature but the belief in the restorability of nature. A more attentive observer (or participant of RWE's guided nature tours) will notice the "replanted nature" – dead tree trunks that are meant to provide artificial nesting opportunities, wire-protected ant hills, resettled from the Hambacher Forst or nesting boxes for bats that have been relocated from the forest. Nature is now reshaped by RWE's developers who reconcile and manage different interests and reconfigure environments into carefully integrated zones of consumption of nature – non-commercial and highly commercialised at the same time, as they serve to justify the hugely commercialised industrial electricity production system so fundamental to industrial capitalism.

The creation of this 'better nature' is based on the very same violent processes of classification, quantification and measuring of life – what Camila Moreno, Daniel Speich Chassé and Lili Fuhr have called "ecological epistemicide" (2015) – ignoring interconnections and social relations to the land and enabling claims of 'net gain' of trees'. *Sophienhöhe* is the outcome of RWE's efforts to make nature commensurable, legible and controllable, requiring continuous surveillance, monitoring and 'careful management' – including regular fertilizer application for decades after planting. More importantly, however, *Sophienhöhe* represents the need to manage the growing and intensifying resistance against the continued processes of human and nonhuman exploitation, displacement, violence and alienation inherent to extractivism. This chapter aims to contribute to their re-visibilisation.

7. Greening extractivism – conserving power: conclusion

The State is in fact structurally indispensable for this predatory model to succeed, as it has the power to make it legally possible – by adjusting the rules of the game – but also socially justifiable – by allowing it in the name of a 'public interest' that is reframed so as to equate with private profit. This way, entire territories that are most targeted by extractive companies become also subject to repressive militarization, leaving little room for discussion and let alone opposition (WRM, 2017: 27).

This thesis set out to understand the history, the development and the political economy of biodiversity offsetting in Europe and beyond. To analyse how offsetting emerged as a language, logic and tool of governance, I asked:

- How has biodiversity offsetting been appropriated and revived by corporate and state actors in Europe and beyond?
- What is the place of offsetting in the social governance of resistance and dissent and how is it shaped by that process?

Through the exploration of the history and practices of offsetting I argued that biodiversity offsetting should be understood as *a social technology of governance* to manage resistance and dissent against corporate and state degradation and violence, and as an instrument to flexibilise restrictive legislation imposing limits to industrial expansion in Europe. Offsets, I have argued, are therefore less about environmental governance or the governance of biodiversity (loss) than about the management of people, particularly institutionalised in conservation organisations and environmental movements. Such management is thus more about *political* rather than *environmental* sustainability – just as the management of environmentalists is fundamental to environmental management (Elkington, 1994). Offsets act as social technologies to legitimise, rather than reduce or minimise, its destructiveness, they contribute to the intensification and expansion of the logic of growth, based on environmental and social exploitation. Consequently, they help strengthen, verify and normalise corporate and state power – legitimised by the illusion that 'something is being done' to deal with biodiversity loss, and manifest in the creation of new tasks, policy areas, corporate departments, spaces and places of governance. The latter effectively strengthens the state as a fundamental framework for dealing with the ecological crisis while naturalising the role of corporations as dependable governance actors. In effect, this leads to enhanced control over land and people, the spread of large (energy, transport) infrastructure projects and the invisibilisation of the violence involved in this system. This thesis further demystifies and denaturalises abstract ideas of the 'market'. It challenges the emerging hegemony of critical analyses of offsetting that often resort to marketisation and financialisation as explanatory devices and contributes to the theorisation of the ongoing

transformation of neoliberal capitalism, statehood and corporate citizenship, as part of wider reconfigurations of governance that are the product of the dialectical relationship between capitalism, the state, and its critics.

In this final chapter I provide a short summary of the chapters and main findings of this dissertation. I reflect on the empirical and theoretical contributions and the political implications of this research, suggesting the salience of an anti-statist, anti-authoritarian perspective to understand offsetting, to discern how it entrenches and 'erases' corporate and state power and violence.

7.1. From Edinburgh conference centre into the 'world's largest hole' – summary and main findings

This thesis contributes to the emerging critical literature on biodiversity offsetting and political ecologies of the global North by documenting the politics of offset-making in three different case studies in different places – at high-level conference centres in Edinburgh and London, in European Commission meeting rooms in Brussels, and in and around the Hambach coal mine near Cologne, Germany.

In the *Introduction: conserving nature or conserving power?*, I laid out the aims of this research, introduced biodiversity offsetting in Europe through the recurrent lenses of institutionalisation and normalisation, and outlined the structure of this thesis.

In chapter two, *Approaching biodiversity offsets: from financialisation to technology of governance,* I explored the valuable contributions of the critical literature on offsetting so far and identified three weaknesses in the existing literature on offsetting: firstly, an inclination to essentialise and naturalise 'the market', risking reification of its power; based, secondly, on a problematic states-versus-market dichotomy that continues to be prevalent in much critical social science research; and, thirdly, the conflation of neoliberal theory and neoliberal practice. I argued instead for the positioning of 'the social' as the primary object of 'offsetting governance', to 'securitise' against *resistance*, not *biodiversity loss* as such.

In chapter three, *Making Europe's nature offsettable: the spectacular performance of sustainability through discourse and (community of) practice*, I explored the distinct intellectual and institutional genealogies of offsetting. First, I analysed the evolution of a particular (Western) conceptualisation of nature that made processes of creating equivalence and commensurability of nature possible on a theoretical or ideational level. Only the imaginaries and narratives of 'one planetary ecosystem' and a 'global biodiversity', which encompasses the

diversity of local natures, open up the possibilities for 'no net loss'. Offsetting involves, I argued, a double-process of abstraction: the move towards the construction of nature as one global system where all components are interconnected, and the subsequent denial of these very same interconnections to be able to break it up into its components – such as ecosystem services and functions – to commensurate and to offset. This conceptual development of 'nature' then allows for the positioning of offsetting as an *insurance mechanism* to deal with the 'risk' that nature constitutes, and turns this risk into a profit opportunity. In the second section of the chapter I introduced the 'offsetting industry' and some of the key actors involved in it, classified according to their roles. I paid particular attention to the emerging 'army of environmental engineers', fundamental to many of the partnerships and projects that offsetting is embedded in, the role of scientists and consultants who develop the methodologies, techniques and systems of classification that render offsetting credible and 'scientific', and the conservation celebrities who popularise and lend legitimacy to offsetting. In the last section, I analysed these narratives and individuals 'in action', in what I call the spectacular performance of conservation in and through Natural Capital and Offsetting conferences: the 2014 BBOP No Net Loss conference and the 2013 and 2015 Natural Capital forums. Through the lens of 'spectacle' and 'ritual', I explored how the aforementioned narratives are played out on stage and how sustainability is performed through the discursive positioning of corporations as saviours of nature. I analysed how a sense of unity is created, a shared 'we' is produced and contesting world views are discouraged.

Having laid out the institutional and discursive and landscape of power within which offsetting is embedded, in the next chapter, *Introducing No Net Loss – an attempt to anchor offsetting in the European political economy,* I then move to the policy space that has been most important in the political discussions around EU-wide offsetting: Brussels. I showed that the No Net Loss initiative constitutes an attempt, firstly, to weaken existing nature legislation in the EU; secondly, to secure access to land and capital by (European) firms; and, thirdly, to manage and diffuse dissent and resistance; effectively facilitating the management and flexibilisation of the very concept of limits to ecological destruction and accumulation. It played into a corporate frustration with current (surprisingly effective) EU nature legislation and the promise of the newly emerging restoration economy, facilitated by a political climate within the Commission that is, today more than ever, concerned with the overriding principle of external competitiveness to facilitate growth. To develop this argument, I contextualised the initiative in the political economy of REFIT, the Commission's management tool to increase competitiveness and 'modernise' nature legislation by 'cutting red tape', and in the global political economy of

biodiversity offsetting, exploring its role in legitimising large-scale (infrastructure and mining) projects and making these industries 'sustainable'. The 'greening' of these infrastructure projects – many resisted strongly – hinges on notions of offsetting and 'neutrality'. Access to land, I argued, increasingly depends on offsetting for capital acquisition, as many international financial institutions now require offsetting for project finance, and for planning consent. Lastly, I argued that biodiversity offsetting is increasingly necessary to generate the social licence to operate that is needed by corporate and state actors in Europe. In this section, I focused on the important function of corporate-conservation partnerships around offsets in dealing with resistance through divide-and-conquer strategies to engage with conservation organisations and marginalise more 'radical' critics. I analysed the work of the EU No Net Loss working group and their very political yet fundamentally depoliticised debates on safeguards, limits, and key terms. The focus on methodological issues and corporate case studies allows the debate on offsetting to 'stumble forwards', with concepts and terms – such as the 'mitigation hierarchy' – acting as vehicles around which new networks of consultants and ecologists have formed, and the offsetting industry has emerged. Despite all of its problems, lack of enthusiasm and weakening of ambitions and outcome, the working group has been important in institutionalising offsets and bringing this debate forward.

The chapter further showed that to understand offsetting in Europe, a sole focus on the legislative processes, Commission initiatives and state policy is insufficient. In the following chapter, *Green extractivism: a brief history of green mining and better coal*, I thus explored the development of (voluntary) project offsetting, focusing on the mining industry. Mining companies have pioneered offsetting across the world, actively showcasing and marketing their 'success stories' involving biodiversity offsets in the global South. I analysed the role of offsetting in the development of 'green' or 'sustainable' mining, the important role of the mining sector in pioneering offsets internationally, the role of CSR reporting and audit culture, and the redefinition of sustainability that 'green mining' or 'sustainable coal' requires. I further introduced the 'Bettercoal Initiative', initiated and led by RWE, and its role in greening coal mining and 'outsourcing critique' by using the language of audit, accountability and transparency without changing business operations. In the positioning of offsetting as a management technique I drew on Michael Power's work on audit culture and risk construction (2007) and James Scott's ideas of legibility and control of nature (1989). These helped me analyse the 'abstraction, rationalization, and expansion of risk management ideas' (Power, 2007: 3) in the development of biodiversity offsetting and their relationship to ecosystem service thinking and notions of stability and resilience. Focussing on the mining industry, I

showed how offsetting constitutes a corporate strategy to deal with regulatory and reputational risks that threaten the industry's licence to operate and its access to land and capital. They have served as a vehicle to pacify and divide-and-conquer the larger environmental movement and to co-opt and re-shape civil society demands of accountability, responsibility and stakeholder engagement – initially brought forward to challenge corporate power – to fit the corporate/state agenda.

Finally, in the last chapter, I analysed these processes of pacification and management of dissent in a case study in the German Rhineland: *Licence to operate – licence to trash – licence to pacify? Biodiversity offsetting in the German lignite coal mining sector.* To point to the specificities of the European political economy of conservation and mining, this chapter analysed the use of offsetting by Europe's largest coal mine operator, RWE. Here, I explored the offsetting-extraction nexus in action, to illustrate the productive power, use and effects of offsetting in a local context, and show its fundamental role in the legitimisation of the ecological destruction and human dispossession associated with coal mining in the Rhineland. Offsets, I argued, constitute a foundational element of RWE's strategies – or 'corporate social technologies' (Rogers, 2012) – of co-optation, violent oppression and pacification of militant resistance; positioning the company as 'good corporate citizen'. They include working closely with national and local civil servants (police, politicians and administrators), volunteer programs, funding schools, sports clubs and cultural events, setting up astroturf groups and creating new physical infrastructures. These operations are complemented by actions by RWE security, employees and police to repress the existing and recalcitrant social movement(s) forming against the mine and the consequent destruction of the *Hambacher Forst* and surrounding towns. Embedded in these strategies, offsetting contributes, firstly, to the corporate colonisation of imagination, fundamental to RWE's attempt to reshape the past and to paint a 'better future' as well as – crucially – a 'better nature', while claiming to make mining sustainable. Secondly, it helps further entrench and institutionalise RWE's interests in the German political economy, shaping policy making and state action at all levels, while positioning RWE as a responsible corporate citizen. In effect, offsetting thus contributes to the normalisation and legitimisation of corporate, state and police violence against the resistance, against the earth and against its inhabitants, especially those who are already marginalised, those living in areas particularly affected by climate change, or close to a mine.

7.2.   Consolidating state power and corporate citizenship: situating offsetting as technology of governance

Throughout this dissertation, I argued for the need to go beyond an understanding of offsetting as a market-based instrument at the forefront of accelerating and intensifying processes of commodification and financialisation of nature, and for its re-conceptualisation as a social technology of governance and source of power. I drew attention to its productive role in securing, legitimising and intensifying industrial activity, particularly extractivism. Through examination of the distinct genealogies of offsetting in theory and practice, I pointed towards more fundamental processes of domestication, domination and commensuration of human and nonhuman nature, and the multiple forms of violence inherent in offsetting.

The increased interest in offsetting, I argued, should be contextualised in the distinct managerial legacy of neoliberalism; marked by its emphasis on flexibilisation of absolute limits to allow for the pursuit of growth, while accommodating diverse interests and to weaken potentially restrictive regulation (such as the EU nature directives) and deal with legislative obstacles to development. The associated rise of 'audit culture' has encouraged the "ritualization of performance and tokenistic gestures of accountability" (Shore and Wright, 2002: 81), triggering the "public perception *that* an activity is performed, while remaining in substance invisible" (Power, 1994: 305). It is no coincidence that the hegemonic discourses around sustainable development and green economy are so vague and flexible that they can be appropriated and instrumentalised for virtually any end; "neoliberalism's very flexibility can be seen as one of its most essential characteristics" (Fletcher et al., 2014: 7; Peck, 2010) and greatest weapon (Kirsch, 2010).

In effect, I argued, offsetting thus serves, firstly, to legitimise and secure accumulation, increasingly (and especially in Europe) by restoration, rather than avoided loss, and in addition to novel dynamics of financialisation of conservation. Secondly, it helps manage dissent against critical infrastructure and extractive projects through the mobilisation of offsets for corporate conservation partnerships that draw in critics and serve to enact the spectacularisation of conservation. Thirdly, offsets not only contribute to securing the role of the state and other transnational governance arrangements, but also the role of corporations as responsible citizens and indispensible parts of modern social reality, entrenching their power and invisibilising violence.

Corporate (self-)representation as *citizen* not only increases corporate influence, but also ingrains the idea that corporations can act *responsibly* and can be *trusted*. "By seeing

corporations as people, we are persuaded that they have ethical values and consciences similar to our own, whereas of course a single-minded legal fiction which is scarcely even legally liable for its own activities has no ethics at all" (Spencer, 2004: 17) – overriding (legal) obligations of profit maximising and shareholder value notwithstanding. Offsetting thus not only legitimises the 'status quo', but contributes to a structurally changing landscape of power where corporations acquire a new type of *citizenship*[52] with associated rights and responsibilities that would have been unthinkable a few decades ago. Corporations exercise this power to shape their surroundings: they create and alter, with the help of the state, cultural, social political landscapes as well as geographies and topographies. RWE builds mountains in the Rhineland and finances mountaintop *removal* in the US (Hecking, 2016); the corporation creates new ecosystems and destroys ancient habitats; villages and habitats are razed to the ground, 'compensated' and 'restored' – tearing apart social fabrics and creating new material dependencies. Corporations shape the world "in accordance with their pursuit of profit, growth, and legitimacy", Peter Benson and Kirsch have argued (2010: 459). The Natural Capital and Ecosystem Services discourses are meant to appeal to this very rationality – found in biodiversity accounting and green economic thinking and facilitating the making of the 'business case' for biodiversity offsets.

This thesis questions this economistic rationality, grounded in expectations of rational utilitarian behaviour, and problematises the underlying universal epistemology (Franks, 2014) and anthropocentrism. Assumptions about human behaviour according to ahistorical and universal social laws (in rational, self-interested, utility maximising manners) are implicit in offsetting discourses around local people's tendency to destroy nature on which offsetting baselines are based; their behaviour is deemed predictable and destructive – unless they are paid to act otherwise. Avoided-loss calculations further reinforce these assumptions, driven by the need to illustrate local threats to nature against which corporate conservation – offsets – can be positioned. This illustrates the need to critique some of the fundamental categories of thought and communication that underlie practices, including the belief in universal human-nature relationships and behaviours, but also the alleged commensurability (cf. Hannis and Sullivan, 2012), quantifiability and restorability of nature.

Throughout the thesis I emphasised the role of offsetting in invisibilising not just the epistemic violence inherent in these processes of commensuation, but also the forms of violence inherent in industrialism and extractivism, particularly coal mining – the violence against those resisting

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[52] This citizenship is further enshrined into international law and inter-state agreements, such as trade or investment agreements.

large-scale industrial/extractive projects and the accompanying social and ecological degradation and the slow violence against the earth and its inhabitants. This is insufficiently recognised in critical accounts of biodiversity offsetting. To make this violence visible, I showed that offsetting needs to be recognised as manifestation not just of the power of capital but also of state power. The state itself relies on social technologies of governance such as offsetting for its own legitimisation and reproduction. This is strengthened through the assignment of *corporate citizenship,* which assigns citizenship rights and recognises 'legal personhood' of corporations (Kirsch, 2014), but strengthens state authority, too. Offsetting thus does not contribute to the loss of state power and control, but to its entrenchment and expansion (Brock, 2015; cf. Konings, 2010).

This thesis thus suggests the need for a more fundamental problematisation of the role of the state as system of oppression, tied to ecological destruction and inextricably linked to aims and practices of industrial progress, growth and extractivism. It points towards the need for further research that problematises the processes of domestication, alienation and exploitation that are inherent in industrialism and statism. Such work may investigate the violence inherent in the hierarchical ordering that lies at the basis of 'the state', and the associated processes of 'othering' that involving human and nonhuman nature; visible in (neo)colonial divisions along lines of race, binary understandings of gender and sexuality, among others. These hierarchies, manifest also in human-nature relationships, allow not just for 'marketisation' but the very fundamental processes of abstraction, quantification and commensuration that offsetting requires, based on ideas of restorability and domestication.

Many critical social scientists and campaigners continue to criticise biodiversity offsetting as a 'failed' conservation instrument, mobilising around its failure to restore or protect nature, the creation of perverse incentives or 'license to trash', and framings as the newest frontier in the expansion of capital. Rather than simply criticising offsets on the grounds of ineffectiveness, this thesis asked: what exactly is being conserved – and renewed? If offsetting allows for, and even facilitates, the destruction of habitat, surely the label of biodiversity conservation instrument is undeserved. If, however, we recognise the role of offsetting in conserving corporate and state power, then offsetting is far from ineffective. Such a critique helps overcome the disempowerment that can result from critiques of commodification and marketisation, and struggles against 'the market', instead helping to identify agents of harm and perpetrators involved. It can make visible the possibilities for resistance where we can, and should, intervene, to 'join a movement, rather than observe it', creating spaces for creativity and re-imagination of the world we want to live in. It can form, I hope, the foundation for struggles towards – and

based on – alternative rationalities and values, for autonomy, solidarity, mutual aid, freedom and care – for nature and each other.

8. Bibliography

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9. Annex 1: List of interviews

European Commission	21/06/2016	Brussels, Belgium	A1
	21/06/2016	Brussels, Belgium	A2
	21/06/2016	Brussels, Belgium	A3
	24/10/2016	Brussels, Belgium	A4
	08/06/2016	Bonn, Germany	A5
Environmental consultants	09/06/2016	Skype	B1
	04/07/2016	Skype	B2
	22/06/2016	Geel, Belgium	B3
	17/05/2016	London, UK	B4
	26/05/2016	London, UK	B5
	15/06/2016	London, UK	B6
	13/07/2016	Skype	B7
Other members of the NNL Working Group (industry representatives, civil society groups)	24/05/2016	Brussels, Belgium	C1
	21/07/2016	Skype	C2
	10/05/2017	Brussels, Belgium	C3
	25/05/2016	Brussels, Belgium	C4
	13/07/2016	Brussels, Belgium	C5
Other civil society groups	10/05/2017	Brussels, Belgium	D1
	02/06/2014	Edinburgh, UK	D2
	03/05/2016	Skype	D3
	26/05/2016	Skype	D4
	27/05/2016	Skype	D5
RWE (Public Relations department, Corporate Social Responsibility department, recultivation centre, legal department)	05/10/2016	Skype	E1
	22/12/2016	Essen, Germany	E2
	10/11/2016	near Cologne, Germany	E3
	10/11/2016	near Cologne, Germany	E4
	10/11/2016	near Cologne, Germany	E5
	03/11/2016	Telephone	E6
Hambach resistance (local citizen initiatives, FoE Germany)	02/09/2016	near Cologne, Germany	F1
	05/09/2016	near Cologne, Germany	F2
	05/09/2016	near Cologne, Germany	F3
	27/10/2016	near Cologne, Germany	F4
	09/09/2016	Wuppertal, Germany	F5
Hambacher Forst occupation (10 interviews)	02-19/09/2016	near Cologne, Germany	G1
Other (Bettercoal initiative, local government body)	07/10/2016	London, UK	H1
	08/09/2016	near Cologne, Germany	H2

10. Annex 2: List of fieldwork events

Inaugural *World Forum on Natural Capital* by the Scottish Wildlife Trust, UNEP, IUCN, WBCSD, and the Natural Capital Coalition	21-22/11/2013	Edinburgh, UK
Nature is Not for Sale: Forum on Natural Commons, counter conference to Natural Capital forum, organised by civil society organisations	21/11/2013	Edinburgh, UK
Nature not for Sale, workshop organised in preparation for *Natural Capital* forum by civil society organisations	19/11/2013	Edinburgh, UK
Workshop on Ecosystems offsetting and trading, organised by civil society organisations	26-27/10/2013	Brussels, Belgium
Second Forum on Natural Commons organised by civil society organisations	02/06/2014	London, UK
To No Net Loss of Biodiversity and Beyond conference by the Business and Biodiversity Offsets Programme in collaboration with Forest Trends, ZSL, and DEFRA	03-04/06/2014	London, UK
Banking Nature, film screening and debate in the European Parliament, organised by civil society organisations	23/06/2015	Brussels, Belgium
Second *World Forum on Natural Capital* by the Scottish government, Alliance Trust, Ministry of Dutch Economic Affairs of the, Earthwatch Institute, World Bank and others	23-24/11/2015	Edinburgh, UK
Carbon trading and biodiversity offsets: Market solutions for environmental problems, or financialisation of nature? Public conference organised by civil society organisations	06/12/2016	Brussels, Belgium
New Frontiers, New Tricks, civil society meeting on offsetting	08/04/2017	London, UK
Shaping and experiencing biodiversity RWE's recultivation conference for scientists, civil servants, conservation groups, volunteers and industry representatives	29-30/06/2017	Paffendorf Castle, Bergheim, Germany
Sustainable Coal Forum organised by the World Coal Association, hosted by Institute of Directors	31/10/2017	London, UK
State of Biodiversity Mitigation 2017: Markets and Compensation for Global Infrastructure Development, BBOP Webinar	11/12/2017	Online

11. Annex 3: Field visits

Public guided tour through the mine
Guided tour through *Sophienhöhe*
Guided walking tour through *Sophienhöhe*
Participation at stakeholder dialogue – tour through *Sophienhöhe*, followed by presentation and discussion with local politicians
Participation at "Peace Plan" preparatory meeting
Guided tour through the *Hambacher Forst*
Visit of castle Pfaffendorf, including RWE's coal museum
Visit of RWE's information centre *Niederaußem*
Multiple cycling tours around the mine
Multiple visits to *Hambacher Forst*
Multiple visits to *:terra nova* and other information and viewing points