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Rethinking Environmental Governance for Development: The Blue Œconomy Dispositive

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Abstract: The Blue Economy is a recent development paradigm, created in response to a refocusing of sustainable development during preparations for the UN Conference on Environment and Development in 2012 in which the 'green economy' was proposed. Coastal and island States called for a 'blue' equivalent. In the years since the 'blue economy' has been enthusiastically received by many, but its exact nature remains uncertain and contested. In this paper I examine in more detail the practices, the technologies, the materialities, of the BE 'dispositif' to address the question of 'place', as it is only in the context of place, I argue, that we can really understand how the Blue Economy is enacted. In doing so, I make the argument that the Blue Economy is a 'security dispositif' (referencing Michel Foucault) and that to govern Blue Economy places well, we need to pay attention to the emergent space-time relations of the dispositif 'in place'. Finally, I argue for a rethinking of economy and of blue economy governance, drawing on relational analysis of empirical cases in Kenya to call for a blue economy that is more sensitive to communities and the places they inhabit – a *blue œconomy*.

Keywords: blue economy; dispositif; place; ocean governance; sustainable economy; development practice

1. Introduction

The blue economy (hereafter 'BE') is a recent development paradigm, being widely promoted by multilateral institutions in connection with UN Sustainable Development Goal SDG14 'Life below water', especially in the African and Western Indian Ocean (WIO) context in which many States are Small Island Developing States (SIDS) or Least Developed Countries (LDCs) and therefore seen as priorities for development. The BE arose as a development paradigm during the preparations for the UN Rio+20 conference on environment and development, as an oceanic version of the 'green economy' which was itself presented at that event as a new approach to sustainable development. The BE represents a development paradigm in which the marine environment is protected at the same time as being economically developed for long term human benefit (World Bank, 2017). It presents the oceans as an underexploited natural resource which provides valuable opportunities for wealth creation, and for attaining food and livelihood security. The BE has since gained much momentum worldwide[1], but its inherent tensions between environment and development (*insert author reference*) have yet to be resolved. As such it is ill-defined, and easily co-opted by sectoral groups in pursuit their own interests (Silver et al, 2015), although efforts have been made to advance a universal definition of a 'sustainable blue economy' (UNEPFI[2]). The BE is generating a diverse body of scholarship, encompassing conceptualisations (e.g. Smith-Godfrey, 2016; Garland et al., 2019; Germond-Duret, 2022), area studies (e.g. Keen et al., 2018; Bax et al., 2022; Llewllyn et al., 2016; Doyle, 2018; Gamage, 2016; Nagy and Nene, 2021) , sectoral analyses (e.g. Pauly, 2018; Choudhary et al., 2021; Cisneros-Montemayor, et al., 2022; Tegar et al., 2018), research agendas (e.g. Pace et al., 2023;

[1] The blue economy has been adopted as a development model in many regions, e.g.: Caribbean https://sdgs.un.org/partnerships/unleashing-blue-economy-caribbean-ubec; Asia https://asean.org/asean-blue-economy-framework/; Pacific https://forumsec.org/2050

[2] UNEPFI website. Accessed, March 2023. https://www.unepfi.org/blue-finance/

Farmery et al., 2020), planning and monitoring tools (e.g. Young, 2015; Tolvanen et al., 2019; Austen et al., 2019), policy (e.g. Bennett et al, 2019; Evans et al., 2023; Axon and Collier, 2023), case studies (e.g. Wenhai et al 2019; Louey, 2022;), critical analyses (e.g. Childs and Hicks, 2019; Cisneros-Montemayor et al., 2022; Ertor and Hadjimichael, 2020; Germond-Duret et al., 2023; Satizábal et al., 2020; Mallin and Barbesgaard, 2020), and more.

As a further contribution to the evolution of the BE as a development model, I aim in this paper to introduce new thinking drawing on classical ideas regarding the home (*oikos*), the state (*polis*) and the prudent management of their resources (*oikonomia),* and empirical data collected in Kenya. Developing Foucault's concept of *dispositif*, an assemblage of technologies and practices of government, I set out a vision of a blue *œconomy* in which relations of community and place take precedence in an alternative to a globalised, capitalist blue economy model.

As a new paradigm for ocean management and development the BE remains relatively untested and its long term impacts uncertain. Its ability to shine a light on 'new frontiers' for development creates an urgent need to understand the implications for the environment and for the communities for whom the BE is positioned as a solution to their development needs. Hence this paper aims to also contribute a new perspective to wider debates on development. Of particular relevance are the tensions between economic growth and environmental limits, which are fundamental to sustainable development – a concept which underpins the UN Conference on Environment and Development from which the BE paradigm emerged. In response have emerged practices which aim to place natural capital and governance, especially active community participation and use of indigenous knowledge, at the centre of sustainable development (e.g: Armitage et al 2019; Bansal et al 2024; Mazzocchi, 2020). Inequities arising from globalisation and resource capture (e.g.: Margulis et al., 2013: Barbesgaard, 2018) have led to efforts to achieve socially and environmentally just outcomes for communities (e.g. Cohen et al, 2019). In the context of the oceans this is complicated by the fluid materiality of the sea (Steinberg and Peters, 2015) - its coastal and marine wildlife communities include important commercial fisheries and other valuable resources which are often mobile, whose distribution holds no relation to administrative boundaries, and for which exploitation is difficult to police. Ostrom (1990) famously explored models of collective governance of common pool resources that had evolved over centuries, including for marine resources, demonstrating that community-led governance and co-management has an important role to play in natural resource conservation and management. More fundamentally, the meaning and object of 'development' has itself been questioned – who decides what is 'good' development and who is expected to benefit from it? Escobar (1984; 1995) and Massey (2005), for example, critique a false dichotomy between developed and underdeveloped regions and the idea that there is only a single desirable development outcome (such as the western capitalist political economy).

1.1. Blue Economy Governance

There is emerging a body of scholarship on BE governance in recognition of the important questions raised by ocean development and the inherent social, environmental and economic trade-offs involved. A variety of epistemological perspectives have been employed in this regard. Winder and Le Heron characterised the BE as an *assemblage* of material and social relations, brought together in a 'blue economy moment'. An assemblage approach, in the authors words "aids relational thinking on reterritorializing human and nonhuman entanglements in coasts, seas and oceans." (Winder and Le Heron 2017: 4). A *relational* rendering of the BE has been developed by other authors too, such as Ntona and Schröder (2020), who focus on the legal dimensions of spatial planning for the blue economy and the enclosure of both ocean space and spaces of decision making. Saddington (2023) argues that the adoption of a *Blue Economy imaginary* by Seychelles has enabled it to mobilise multiple identities in its quest for international investment in climate and ocean governance. A *political ecology perspective* has revealed the BE as a space of multiple potentials, and of political struggle between environmental and economic goals. In the Faroe Islands Blue Growth strategies lead to conventional growth through the exploitation of new commodity frontiers, and new social and ecological distribution conflicts (Bogadóttir, 2020). In Namibia, the blue economy discourse re-frames the

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marine environment as an extractive space, leading to new forms of struggle driven by the pursuit of capital accumulation (Carver, 2019). Childs and Hicks (2019) draw attention to the "vital need to situate the blue economy in particular places and examine its specific effects" (Childs and Hicks, 2019: 335), arguing that overlooking the specificities of context is to overlook "the ways in which a particular type of (capitalist) expansion is rationalized, legitimized and contested around the 'blueing' of the imperatives of economic growth." Midlen echoes this theme "the material and spatial specificities of places have often profound consequences for how governance is exercised, creating sites and spaces of resistance" (Midlen 2021: 439). BE has been characterised as a *governmentality*, a set of practices and tactics employed to remake oceans as governable and developable spaces (Choi, 2017; Flannery and McAteer, 2020; Midlen, 2021). Midlen (2023) argues that the BE rationality represents a global governmentality, and in particular a 'collaborative BE governmentality' which is produced by the global and African BE discourse. This stresses the need to secure food and livelihoods for a rapidly growing population (Africa's population is expected to double by 2050), in the face of longstanding trends of environmental degradation brought about through rapid coastal urbanisation, over-exploitation of natural resources, and climate change.

1.2. Blue Economy and Ocean Management in Kenya

In Kenya the BE is a national priority, seen as a key sector in the country's Vision 2030 transformation programme. A Blue Economy Sector Plan (Government of Kenya, 2018) identifies key programmes, principally fisheries reform and development, training (fisheries and seafaring), capacity building (e.g. local fisheries management institutions, Coastguard service) and sub-sector development (maritime logistics, fish processing). The country has recently adopted a devolved constitution, with the Counties slowly evolving into their new roles. The Kenya coast includes 6 counties, formerly comprising the Kenya Coastal province, which was itself a former Swahili Sultanate. The Jumuiya Ya Kaunti Za Pwani (JKP) organisation is a platform for collaboration between these counties on economic development matters, and a proponent of the blue economy. Kenya's coast harbours important environmental resources, most notably mangrove forest, seagrass meadows, coral reefs and their associated flora and fauna. Their conservation, and necessarily the livelihoods of the communities that use and rely upon them, has attracted the attentions of numerous environmental NGOs, both international and Kenyan. The 2010 Kenya constitution enables co-management of natural resources between government and communities. Kenya has a large informal economy (ILO, 2021) and an entrepreneurial culture. Multilateral institutions regard blue economy development in Kenya as a priority, with large programmes underway (at the time of writing) funded by the World Bank and European Union each having a strong emphasis on artisanal fisheries management and coastal livelihood diversification.

2. Analytical Perspectives

In this paper I aim to make a contribution to the ongoing evolution of the BE as a development paradigm. I use Foucault's concept of 'dispositif' as an analytic lens to understand the BE in the WIO and Kenya, and to draw attention to its spatial relations and the contextual importance of place. In so doing I situate the blue economy conceptually as *practice embedded within place-space-time relations* and draw upon this to argue for a rethinking of environmental governance in the oceans.

2.1. Dispositif

Foucault set out his thinking on 'dispositif' in his lectures at the College de France on 'Security, Territory, Population' (Foucault, 2007) in which he describes the evolution of forms of government in western Europe from the C16th to C19th. In his analysis 'Sovereign' power is the "right to take life or let live," a right that ultimately resides in and is exercised as the "right to kill" (Foucault, 1975-6: 2003: 240-1) and which has the individual as its focus. During the C18th as populations expanded, the rationality of power shifts from the sovereign concern with territory (observance of boundaries and limits, and obeyance of rules and constraints) to the biopolitical concern with population (Aradau

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and Blanke, 2010), and especially to one of *managing circulation by directing freedom*. Foucault referred to the rationale and technologies of government by which this power is exercised as a 'governmentality' (e.g. Dean 2010a; Rose et al, 2006; Crampton and Elden, 2007). Governance through 'discipline' in Foucault's analysis replaces sovereign power with technologies of power and knowledge to create self-disciplining subjects who conduct themselves according to the State's expectations.

In contrast to *governmentality*, the term *dispositif* was introduced by Foucault to describe a "heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions." (cited in Raffnsøe et al. 2014: 10). Foucault stresses that the dispositif is more than the sum of its parts (elements), perhaps using the term apparatus here in reference to its generative capacities: "The apparatus itself is a system of relations that can be established between these elements.... what I'm trying to identify in this apparatus is precisely the nature of the connection that can exist between these heterogeneous elements". Further, he stresses that a dispositif has a particular strategic function, "I understand by the term "apparatus" a sort of – shall we say – formation which has its major function at a given historical moment that of responding to an urgent need" [an '*urgence*' in French] (Foucault 1980, 194–195, cited in Pløger 2008, 55). In Braun's interpretation rather than being a governmentality, a single system of management with a common rationality, the dispositif consists of "a diverse set of knowledges, practices, and institutions that have no more unity and no more necessity beyond the simple fact of being stitched together" (Braun, 2014: 52). The translation of the word dispositif from French into English has caused much debate, with a range of terms being used. Foucault himself used 'dispositif" and 'appariel' interchangeably at times, but settled on dispositif as his thinking progressed (Bussolini, 2010), and these terms have generally been translated as 'dispositive' and 'apparatus', respectively. Agamben, concerned with the origin of the term, links dispositif with the ancient Greek *oikonomia* (its latin translation being *dispositio*) and so situates dispositif in the context of a 'divine economy' (Frost, 2019; Bussolini, 2010). As the translation of dispositif into English is problematic, I follow other authors in using the term in its French form. Bussolini (2010: 96) has argued for a clear distinction of meaning between appareil (apparatus) and dispositif (dispositive): "Apparatus might be said to be the instruments or discrete sets of instruments themselves – the implements or equipment. Dispositive, on the other hand, may denote more the arrangement – the strategic arrangement – of the implements in a dynamic function", that dynamic function having a generative capacity. In this vein Gailing reminds us of the contingent nature of social relations and how Foucault's approach to analysis of discourse allowed him to "describe the complicated and ongoing change within practices" (Gailing, 2016: 246). Further, it is through the dispositif that the human being is "transformed into both a subject and an object of power relations" (in Frost 2019: 152, citing Esposito). For Pløger, the dispositif constitutes an ensemble of "disciplinarian forces through relations of power, knowledge and space" in which space is 'active' (Pløger, 2008: 52). However, "space does not determine; it signifies, it disposes, 'allows' more than 'forbids' specific practices" (Pløger, 2008: 60). The dispositif, then, is a more diffuse representation of governance than a governmentality. It represents a collection (an *ensemble*) of elements that come together as a result of diverse forces and influences (rather than of a deliberative governmental rationality) and to which a response is needed (an *urgence*). Nevertheless, it embodies a generative power - an ability to shape subjects and to allow, or make space for, practices of governance.

2.2. Dispositif of Security

A shift from a sovereign concern with territory to a biopolitical concern with population lies at the heart of Foucault's analysis of government. The security of the population becomes the focus of power. The population's freedom, defined as "the management and organization of the conditions in which one can be free" becomes a counterpart to this security (Wichum, 2013), this freedom being

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constantly produced[3]. The possibility to restrict freedom, through security, is therefore an essential part of freedom. Wichum sees this relationship between the production of freedom and the continuous possibility of its restriction as central to the role of the security dispositif. Citing Foucault, Wichum reiterates that the essential problem of security is *circulation*: "An apparatus of security… cannot operate well except on condition that is given freedom… the possibility of movement, change of place, and processes of circulation of both people and things. I think it is this freedom of circulation… it is in terms of this option of circulation, that we should understand the word freedom, and understand it as one of the… dimensions of the deployment of apparatuses of security," (Foucault, 2007: 49). This security is effected through biopolitical practices of "organising circulation, eliminating its dangers, making a division between good and bad circulation, and maximizing the good circulation by eliminating the bad" (Foucault 2007: 18). The concept of security dispositif has been the topic of much scholarship, both as an analytic device and as a philosophical paradigm (see Lobo-Guerrero, 2007; Aradau and Blanke, 2010; Dean, 2010a; Muller, 2011; Huber and Scheytt, 2013; Watts, 2013; Quassoli et al, 2018). Within the security studies literature, the 'state of exception' engendered by security dispositifs has become a significant focus of attention (eg Dean, 2010b), especially in relation to the 9/11 terrorism events. In environmental discourse, however, a micro-politics of risk and a series of macro-securitizations enable and legitimize the governmental machinery (Methmann and Rothe, 2012) without resort to exceptional measures. Aradau and Blanke (2010: 1) refer to a modern imaginary of 'securing through circulation.' What matters, they argue, "are 'unruly' movements that need to be prevented, contingencies that need to be pre-empted and good circulation that is to be fostered."

2.3. Governance and Place

Whilst Foucault's governmentality and dispositif are certainly concerned with space (ref. their concerns with populations and circulations respectively), the connection with place is poorly developed in literature on governance. But what *is* 'place'? For Puleo (2012: 1) place is a specific engagement with space, and "whilst space is abstract, place is experienced". Cresswell (2009) notes that since the 1970s place has been conceptualized as a particular location that has acquired a set of meanings and attachments, as distinct from location itself (a distinct point in space) and locale (the physical setting for a location). Individual places have a particular material structure, but also hold meaning derived from personal or collective experience and from practice, the mundane or momentous things that people do in a place. Places are defined, therefore, by their material and social relations. Aristotle considered place to be fundamental, enabling the understanding of space, movement and change (Casey, 1997). Everything that exists, for Aristotle, has to be located, has to be some*where,* and hence place is the starting point for all other forms of existence. Malpas (2012), considering the *actual nature* of space in relation to understanding spatialisations in geographical research, argues that space (and time) is subservient to place. Therefore, in the context of this paper, a spatialised understanding of the blue economy and its governance must take account of the particularities of place. A diffuse literature on place-based (as opposed to place-neutral) governance encompasses many epistemologies – see for example: Integrated Regional Policy (OECD, 2009); place-based urban food governance (Coulson and Sonnino, 2019); place-based climate risk governance (Krauß and Bremer, 2020) - but a common conception of *place* in relation to governance is lacking.

3. Methods

In this paper I use the concept of dispositif to analyse empirical data on blue economy practices. However, following my earlier arguments, I regard place as a critical element in BE emergence,

[3] see Michel Foucault, The Birth of Biopolitics: Lectures at the Collège de France 1978-1979 (Basingstoke; New York: Palgrave Macmillan, 2008), 63-64; 65.

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governance being contingent upon the spatial and material dimensions of place which I explore using a spatialised perspective (*insert author references*).

Foucault considered discourse to be a technology of power and knowledge (Foucault, 1998). He argued that discourse shapes or produces reality by framing problems of government and by privileging certain solutions over others. Those solutions, in turn, give rise to practices and knowledges that themselves exert power over subjects. Discourse analysis has particular strengths for environmental policy analysis, including an awareness of the role of language and knowledge in constituting policies, polities and politics and as exerting power effects, and how practices of government are constitutive of power relations and knowledge systems (Feindt & Oels, 2005). Many authors have used discourse analysis to investigate environmental questions, for example: Griggs and Howarth (2019) analyse discourses surrounding UK airports policy; Zelli et al (2019) use discourse analysis to unravel institutional complexity in REDD+ governance; Shaw (2013) reviews international climate change policy targets as represented in the news media.

Discourse analysis was applied to policy documents relating to the BE in Africa and the Western Indian Ocean (Appendix 1) region, supported by key informant (Table 1), semi-structured interviews (March-July 2021) and site visits to projects and enterprises in Kenya and Seychelles between October 2021 and March 2022, this aspect having full ethics approval. Case studies, reported below, were developed from these visits and related interviews.

Texts were coded according to an analytic framework of governmentality and place (*insert author references*) using NVivo 12 software. Coded text was transferred to a mind map (SimplemindPro software) to enable a more integrated approach to classification and thus a 'spatialised governmentality' analysis. Further analysis involved the identification of specific technologies, institutions, knowledges and practices of government – collated into a spreadsheet and categorised inductively. Further inductive analysis, conducted through close readings of empirical data collected through fieldwork informed by dispositif scholarship, led to elucidation of constituent spatial relations of the BE dispositif, and circulations within the dispositif.

The author is a European, with direct experience as a practitioner in coastal and marine resource management in Europe. This brings both valuable insights into the analysis presented in this paper, but also potentially introduces cultural biases based on European institutional norms. The use of governmentality as an analytical perspective is valuable in this context, with its focus on identifying and understanding specific *practices*, thereby helping to avoid cultural bias. Working with and through locally active NGOs helped to navigate the local landscape of organisations, initiatives, and key individuals.

Table 1. Key informants and codes.

Organisation	Expertise	Code	Date of interview
Beach Management Unit	Community based fishery management	BMU1	18.12.2021
County Administration	Coastal fishery management	FM1	4.11.21 and 20.12.21
County Administration	Spatial Planning	SP1	03.12.2021
Jumuiya Ya Kaunti Za Pwani	Coordinated action for blue economy in Kenya	JKP	03.11.2021 and 25.01.2022
State Department for Fisheries, Aquaculture and Blue Economy, Government of Kenya	Implementation of World Bank KEMFSED project	KEMFSED	16.03.2021

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Kenya Marine and Fisheries Research Institute (KMFRI)	Mangrove ecology and restoration; coastal processes	KMFRI 1 & 2	27.10.2021
Save Lamu	Community activism	SL	15.11.2021 and 25.11.2021
Association for Coastal Ecosystem Services (ACES)	Administering community accreditation and carbon credit sales	ACES	05.11.2021
Plan Vivo	Accreditation body for carbon credits	PVivo	01.12.2021
Gazi Community	Community management of mangrove-based carbon credit programme	GComm	27.10.2021
Pate Island Marine Community Conservancy	Community-led coastal conservation management for fisheries and mangroves (Community leaders, managers, fishers, & rangers interviewed)	PIMCC 1, 2, 3, 4	21 & 22.12.2021
Crab Shack and Beach Shack	Community-led enterprises for coastal conservation	ENT 1 & 2	30 & 31.10.2021 and 28 & 30.01.2022
LAPSSET CDA	Spatial Planner	SP2	19.10.2021
The Nature Conservancy	Coastal ecology and community development	TNC1	10.11.2021
Kumbatia Seafood Ltd	Fish merchant start-up company	KS1	3 interviews: Dec 22 and Jan 2022
Northern Rangelands Trust	Community development and conservation	NRT1	01.12.2021

4. Findings

The following summaries briefly describe a selection of cases that I draw upon as diverse sources of empirical evidence for my arguments in this paper, contributing to and complementing the discourse analysis described above. These projects and enterprises on the Kenya coast were visited between October 2021 and March 2022. They were selected due to the relationship of each to natural marine resources, their strong association with place, and their ability to reveal new understandings of BE governance.

4.1. Governmental Programmes

In Lamu County two governmental programmes were investigated: fisheries reform and the LAPSSET (Lamu Port, South Sudan and Ethiopia Transport) corridor development programme. Both represent programmes led by the Government of Kenya to address their BE priorities.

Fisheries reform recognises the importance of inshore fisheries to the coastal population, as a source of food and employment, but also that there is much waste due to poor infrastructure and poorly functioning markets and that coastal stocks of fish resources are under increasing pressure from poorly controlled fishing. The Government's response is a programme of stock assessment, fisher and fishing boat registration, infrastructure development, market reforms, and capacity building amongst fishing communities and fisheries co-management institutions.

However, there exist structural failings which limit the scope for reform until overcome: fishers do not own boats but rent space on them, pay for fuel, loan nets etc and may be required to sell catch through the trader or vessel owner that advances working capital to them. This enables traders to control prices. Lack of infrastructure, especially for managing fish quality (ice, ice boxes, refrigerated transport etc) and getting it to distant markets, leads to price volatility and high rates of waste. Fishing

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vessels are restricted to nearshore waters, not being designed for the open ocean, limiting alternative fishing options. However, reduced stocks necessitate fishing further afield, increasing fuel costs, reducing profitability, and pressuring new stocks (FM1; BMU1; TNC1; KS1). The cost of entry is low, so fishers join when the general economy is poor, inflating fisher numbers and exacerbating these problems - in Lamu County alone there are upwards of 10,000 fishers (BMU1). Knowledge regarding fish stocks and their population dynamics are poor, limiting options for management. The collection of fish landings data is being digitised (FM1). Counties fishery management capacities need strengthening for effective enforcement of fish hygiene laws, movement controls, and gathering fishery information (FM1; JKP).

The Lamu Port, South Sudan and Ethiopia Transport (LAPSSET) Corridor is a continental mega project many years in the making. Its first completed project consists of 3 container shipping berths of a projected 27 at Lamu Port, and associated infrastructure (access roads, dredged shipping channel) (SP2). The Lamu County Spatial Plan makes provision for an industrial zone and a new city, airport, resort town, and oil terminal (SP1). Plans for a coal fired power station have been shelved, following a successful challenge in the courts (SL; press reports[4]). The corridor, as planned, will eventually comprise road, rail and oil pipeline infrastructure reaching into central Africa and connecting to the west coast, and three new airports in Kenya associated with new development zones (Lamu, Isiolo, Turkana)[5]. LAPSSET is one of Kenya's priority projects for its Vision 2030 and represents the government's response to perceived development needs in the north of the country[6]. Dredging of shipping channels has led to impacts on fisheries in the Lamu archipelago, provoking local communities to take legal action. The Kenya courts found that environmental impact assessment and community consultation regulations had not been correctly followed (High Court of Kenya, 2018) and awarded substantial compensation to the 4000+ fishers affected (BMU1; SL). The port development has sparked land speculation, illegal acquisition of land title, and contestation of compensation settlements for gazetted (compulsorily acquired) land, triggering more court cases (SL). Indigenous communities formed a 'Save Lamu' partnership to secure and protect their rights and to make their voices heard. A Biocultural Community Protocol, a device to document traditional uses of natural resources, has been used to establish rights to land, and to forest and marine resources. Post-independence resettlement of Kenyan's of non-coastal tribes to the area has resulted in long-term resentment over perceived preferential access to land and jobs and political elitism, and has been exploited by Al Shabab terrorists to stoke division amongst the muslim majority (Nyagah et al., 2017). Lamu island is an important tourist destination for the County, Lamu Old Town being a UNESCO world heritage site, and planned development on the mainland and its spill-over effects is a concern for its heritage status.

4.1. Community Initiatives

Kenya has an active community-led development sector. Kenya's Constitution allows co-management of community resources, through agreement between formal Community Associations and the relevant government Ministry. These agreements specify what activities are permitted within a delimited area, both restricting certain uses and enabling others and aiming to ensure that natural resources are not over-exploited. Kenya's coast is the site of important mangrove forest resources, particularly in the south (Kwale County) and the north (Lamu, and Tana River Counties). These forests have traditionally been sources of wood for fuel and construction, and have provided sources of food (e.g. fish, crab, honey) and medicinal herbs (KMFRI1; SL; Anon, 2016). They are important as

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[4] e.g. BBC News: "Kenya halts Lamu coal power project at World Heritage Site" 26th June 2019 (accessed October 2024) https://www.bbc.co.uk/news/world-africa-48771519

[5] See details at https://lapsset.go.ke/ (Accessed Oct 2024)

[6] https://vision2030.go.ke/project/development-of-new-transport-corridor-from-lamu-to-ethiopia-and-s-sudan-lapsset-project/ (Accessed Oct 2024)

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nurseries for fish populations of the adjacent seagrass meadows and coral reefs. Forest resources have been degraded as a result of increasing demand for these resources as human populations grow (KMFRI1; ENT2).

The Mikoko Pamoja project in Kwale County, community initiatives in Watamu, and Pate Island Community Conservancy in Lamu County were selected for study given their strong dependence on natural marine resources.

Pate Island has little infrastructure, no secondary school, and is remote from regional transport hubs. There are few employment opportunities beyond fishing and women have traditionally been under-employed, limiting family incomes (TNC1). Preventing further degradation of mangrove forest, corals and seagrass is seen by the County government and environmental NGOs as priorities for nature and also as opportunities to develop better and more sustainable livelihoods for the island's communities. Locally Managed Marine Areas (LMMAs) have been established, with closed seasons and gear restrictions for fishing (PIMCC2). A micro-credit fund has enabled the establishment of small enterprises, especially by women (NRT1). Training helped to build community capacity and support for testing new management approaches (PIMCC2). The subsequent octopus fishing closed season is regarded as a considerable success (PIMCC1 & 3), and the community hopes in the long-term to generate tourism and carbon credit revenues from restored coral and mangrove resources. A Community-led security service polices protected area rules (PIMCC4).

In Gazi village, further south, the Mikoko Pamoja project conserves mangrove forest to generate carbon credits, the revenues from which support development projects to improve the lives of villagers. This involves complex monitoring of mangrove regeneration, and transparent governance to ensure community benefit is equitably managed. Carbon credits are managed by a UK-based NGO and sold to international companies to offset their emissions. In this way Gazi village is connected to the global economy, with potential risks and well as economic rewards.

In Watamu, mangrove conservation efforts have taken an alternative route. Conservation-focused initiatives have evolved into social enterprises generating revenues and employment in the tourism sector. Conservation remains a core objective, and a high quality natural environment as the enterprises' principle asset.

5. Discussion

I make the argument that the BE is a security dispositif, responding to an *urgence* regarding both global and local pressures - the consequences of environmental degradation and human development needs. Security dispositifs are concerned with *circulations*, and I illustrate this in the context of the BE drawing on empirical data from case studies. I further argue that the critical relations of the dispositif are spatial in nature, and that of these spatio-*material* relations are prominent. Finally, in this section, I argue that the BE dispositif is both constitutive of place and a product of place.

5.1. BE as a Security Dispositif

Security is a priority for the UN (eg Jaeger, 2010), which is concerned with a wide range of threats: traditional security concerns such as crime, terrorism and war, and non-traditional concerns for human security such as public health, availability of food, access to environmental resources such as water and so on (Caballero-Anthony, 2016). Consequent moves towards securitisation of these domains increasingly influence the architecture of global environmental governance (Liebenguth, 2020). Global discourses of risk and security (concerning climate change in particular, but more recently extending to biodiversity loss) have spawned a new lexicon - of vulnerability, resilience, adaptative capacity, complexity, etc - and with this a sense of planetary emergency, an *urgence*, arising from threats of massive, catastrophic risks and uncertainties arising from global environmental change, from globalisation, and from the development challenges of the global south (Watts, 2013). BE is proffered as a mechanism to address such challenges in the context of 'Life below water' (SDG 14) or, more broadly, ocean governance. The World Bank (2017) suggests that the BE represents the *primary* mechanism to achieve SDG14 targets.

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The policy discourse in the WIO clearly and consistently presents the BE as a solution to the region's human security challenges. According to WWF, an INGO, "Some 60 million people live within 100km of the coast across the entire Western Indian Ocean" (Obura, 2017) putting coastal resources such as fisheries under pressure. These resources are relied upon "for economic and food security as well as for their social and cultural identity." A solution to these ills is better managed and more sustainable use: "For three-quarters of the African continent, the blue or ocean economy is its principal economy and, if well used, could be a potent engine for economic growth" (AMCEN). According to the AU, "aquatic ecosystems present abundant opportunities for the African Union member states to participate in sustainable ocean (blue) economy by harnessing the potentials for improving productivity of the ocean environment, job creation, strengthening food and nutritional security, wealth creation opportunities and environmental sustainability toward sustainable blue economy development" (AU-IBAR, 2019). Consequently, the BE has been integrated into development policy. Thus, the BE program is one of seven 'flagship programmes' to implement the *Feed Africa Strategy*, which aims to lift millions out of extreme poverty; end hunger and malnutrition in Africa; and sustainably develop its fish resources (AfDB, 2018). Nationally, the Kenya Sector Plan for the Blue Economy, for example, claims that "Humankind depends on a safe, sound and secure maritime domain" and ascribes many benefits to this security, including peace, international security and stability, the ability to "feed billions of people", human development, economic growth and prosperity, and preservation of ecological diversity and coastal livelihoods[7].

In response to this discourse an *ensemble* of 'institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions' (to reference Foucault) are being introduced across the region. Fishery reform, a BE priority in Kenya, illustrates the complex nature of a BE dispositif well. Coastal fisheries management is in its infancy here. It is a crucial sector to the livelihoods of coastal communities, but nearshore finfish stocks are generally overfished (Kimani et al, 2018). The Fisheries (Beach Management Unit) Regulations 2007, the National Oceans and Fisheries Policy 2008, the Fisheries Management and Development Act 2016 and associated Marine Fisheries (Access and Development) Regulations 2022 provide the policy framework for artisanal fishery management. The freedom of fishers to go to sea and fish without restriction has led to overfishing and the consequent depletion of stocks and catches in coastal regions. The cost of entry is low, so fishers join when the general economy is poor, inflating fisher numbers and exacerbating these problems - in Lamu County alone there are upwards of 10,000 fishers (BMU1). Beach Management Units (BMUs) were introduced as a local unit of management for these artisanal, or small scale, fisheries. They are community-based organisations comprising members of the various subsectors of fishing - fishers, boat owners, processors, traders etc - and allow for co-management between community and government (BMU1). Each official landing place has a BMU. Securitising fisheries (and thus the food they produce) involves processes of inscription and subject creation, in which the BMUs play a central role. Key informants (FM1, BMU1) described elements of the process being introduced in Kenya: fishers are registered through their BMU and their boats licenced, providing the means to control access to fisheries, both through inclusion/exclusion, and more progressively (increasing registration or licencing fees over time for example). Requirements on registered fishers to declare catches (to County inspectors) at specified landing sites enables individual fisher effort to be recorded and aggregated as the basis for its monitoring and regulation. Training programmes aim to transfer good practices to fishers. Fishing activity is permitted/excluded spatially by creation of specific use zones. Stock assessment calculations provide a basis for allocations of future catch, either to individual fishers, to communities, or by area. BMUs (have been established to co-manage fishing areas, monitor landings, pressure stocks have been identified (eg lobster) and work is underway to understand stock status for priority species.

Kenya's coast is also the site of important mangrove forest resources, particularly in the south (Kwale County) and the north (Lamu, and Tana River Counties). These forests have traditionally

[7] Govt of Kenya, 2018. Sector Plan for the Blue Economy, 2030

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been sources of wood for fuel and construction, and have provided sources of food (e.g. fish, crab, honey) and medicinal herbs (KMFRI 1; SL; Anon, 2016)). They are important as nurseries for fish populations of the adjacent seagrass meadows and coral reefs. Forest resources have been degraded as a result of increasing demand as human populations grow (e.g. Kirui, 2013; Kairo et al, 2021) and ineffective control of timber extraction and development. 'Blue carbon' is promoted as a BE response to these challenges, referring to the generation of revenue from sales of carbon credits in return for sequestering carbon through mangrove conservation, itself paid for by the carbon credits. The financialisation of natural resources is a key plank of the global BE vision, as a way of financing natural resource conservation (eg Christiansen, 2021; Sumaila et al., 2021). This process, like fisheries reform, also involves the securitisation of natural resources, as illustrated by the Mikoko Pamoja project in Kwale County, Kenya. Again, considering security as a process of managing circulations, of restricting freedom, the project depends on a bounded area from which people and activities can be excluded or included. A Management Agreement with the Kenya Forest Service specifies what activities the registered community can undertake, where, and to what extent (KMFRI1). To generate carbon credits, the project must be registered with a voluntary Standard-setting body which certifies its compliance with international standards. This involves assessment of the proposed management actions and the calculation of the projected carbon volumes sequestered or not emitted (avoided loss). This we can think of as interrupting the 'bad' circulations of carbon and thereby lessening the impact of CO_2 emissions on the climate. Carbon credits must be attributable to management actions and therefore measurement and processes of assurance are essential elements of the dispositif. Accredited through Plan Vivo, the project generates approx. US$30,000 pa revenue in carbon credit sales on voluntary carbon offset markets, priced at a premium to reflect additional social benefits over and above carbon sequestration (ACES; Plan Vivo). These revenues, and the markets that generate them, are essential to the workings, the *dynamic function*, of the dispositif. The revenues incentivise engagement in the BE, paying for annual monitoring undertaken by community members, which generates employment, and investment of surplus revenues in community projects (GComm). At the time of visiting, the community's priority was the installation of water distribution infrastructure to improve access to safe, clean drinking water.

In these cases we see various controls on freedom effected by the BE security dispositif - the freedom to fish (what, how, where, and when) and to land catch, or to extract timber. This is in response to an *urgence* of resource depletion, and in pursuit of BE solutions. In the fisheries sector, one of the primary objectives of which in Kenya is to reduce overfishing, these solutions include measures to reduce post-harvest losses, and to increase income and employment through a better developed value chain (FM1; JKP; KEMFSED). The various measures amount to *an ensemble*, or a regime, of practices, policies etc. designed to effect security.

5.2. Spatial and Temporal Relations in the BE

If freedom is a dimension of the security dispositif then so too are time and space, within which circulation takes place. Implicit in the concept of security is the prevention of events deemed undesirable. Thus, security dispositifs have a temporal dimension, being concerned with the future, with uncertain, unpredictable events that might never happen but are always possible (Wichum, 2013) and which can only be controlled through technologies of risk, which themselves rely on estimations of probabilities (e.g. see Huber and Scheytt, 2013). This contingency of threat is rationalized by security dispositifs through logics of pre-emption, precaution, and preparedness (e.g. Wichum, 2013; Aradau and Blanke, 2010; Methmann and Rothe, 2012. See also Anderson, 2010 regarding 'anticipatory geographies') - regulation of space is guided by the principle of partitioning: "One must eliminate the effects of imprecise distributions, the uncontrolled disappearance of individuals, their diffuse circulation, their unusable and dangerous coagulation (Foucault, 1979: 143). Thus, fishery management uses models of stock dynamics and environmental variables to predict annual recruitment to fish stocks and the consequent variation over time in standing stock as the basis for setting precautionary limits to catch. Production of carbon credits relies on the estimation of a counterfactual scenario, the 'business as usual' case, against which the effects over time of lower

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risk scenarios of management can be evaluated. Temporal circulations are largely about change, and are designed to either restrict it or enable it. Restrictions on fishing, for example by means of closed areas in which fishing is prohibited, allow fish stocks in that location to recover over time. On Paté Island, a closed season for octopus allows stocks to recover resulting in a more profitable and sustainable fishery (PIMCC 1, 2). Carbon sequestration in the Gazi mangrove forest (Mikoko Pamoja project: KMFRI 1; GComm) slows the circulation of carbon in the biosphere as a response to the accelerated circulation of carbon brought about by extracting it from the geosphere and burning fossil fuels. However, the rate of sequestration is mediated by the relative success of management actions. Whilst the enforcement of logging restrictions is effective, loss of mangrove areas due to coastal erosion limit sequestration progress (KMFRI 2). In light of the centrality of these spatial and temporal factors, I argue that the BE dispositif is characterised largely by spatial and temporal relations, and those being largely of a *material* nature, themselves originating in the heterogeneous and unpredictable character of the ocean and coastal environment.

5.3. Dispositif and 'Place'

Given the centrality outlined above regarding 'location' in the context of temporal and spatial dimensions of governance (material circulations; partitioning and inscribing of space; presence/absence), I argue that 'place' is also intricately associated with dispositif. Malpas (2012) argues for the pre-eminence of place over space and time, making the case that place is constructed through *bounded space-time relations*. In a philosophical sense, boundedness presupposes difference, and difference presupposes relationality. That is, relationality depends on the existence of separate entities, one relating to the other, which are necessarily bounded and being bounded are both spatial and temporal (the two being inextricably linked. Malpas, 2012). Boundedness also establishes location and orientation, making possible the differentiation between a 'here' and a 'there' and so differentiating 'place' (Malpas, 2012). Thus, if the character of a dispositif is defined by relations between its elements, then it must be spatial (i.e. comprising differentiated elements), temporal (i.e. encompassing uncertainty, change, and emergence or 'becoming', and therefore uncertain and multiple futures), and bounded, comprising a limited set of relations due to its having a 'strategic function' and arising in response to an *urgence*, to a certain need. The dispositif then is a set of bounded space-time relations and is therefore constitutive of place. The relational character of place, in turn, is constitutive of subjects. The creation of subjects is central to Foucault's thinking on governance and how this process is mediated by relations of knowledge and power (see Foucault, 1982; Cremonesi et al, 2016). The role of place in subject creation is illustrated by Pløger in his analysis of urban planning as a security dispositif. Urban planning and architecture act together as an 'apparatus of normalisation' through the production of securitised, or disciplinarian, space. "The apparatus here involves a spatialization of a social field of action through the installation of materialities in social space. However, materialities also have to turn into some kind of representation in order to have effect" (Pløger, 2008: 57). That is, these materialities of the built environment (being both intentional and functional) are, in effect, discourse and generate the relations of a security dispositif.

However, in the context of the ocean the ability to create a disciplinarian environment is severely curtailed. Foucault used the concept of the *panopticon* as a 'diagram' to illustrate the mechanism by which discipline works in society. The Panopticon, a design for an ideal prison by the C18th social reformer Jeremy Bentham, consisted of a cylindrical building containing cells, the prisoner in each being visible from a central tower, silhouetted against the light from external windows. The constant possibility of being observed conditions or coerces the inmate to behave in accord with society's expectations. In this way the subject is disciplined by the 'gaze', by constant visibility. Pløger and others (eg Piro, 2008; Høghøj, 2020) make the case that the disciplinary function of architecture extends well beyond the prison, to hospitals, schools and similar institutions, but also to the design of public space, highlighting the role of the material elements of the dispositif. However, the coercive power of the gaze is limited in its effects to human populations and individuals - the subjects of the dispositif - mediated through their relations with their material surroundings. The natural world, on

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the other hand, constitutes a source of diverse and heterogeneous elements which, unlike architecture, are not in the control of society. Weather events, tsunamis, fish migrations and so on cannot be coerced by the gaze. Instead, they are 'bad circulations', sources of uncertainty and threat and, through the calculation of probabilities, become risks.

So far, I have demonstrated that the BE dispositif is a security dispositif, concerned with the 'management' of unpredictable socio-material relations between society and the ocean and coastal environment. Measures enacted in the name of the BE are consequently mechanisms of subjectification, inscription, partitioning, and (re)territorialisation resulting in spatialisations of people and things. These spatio-material relations are constitutive of place and of subjects, and can be said to be central to BE implementation 'in place'. In turn, places shape the BE, their material elements co-constituting the dispositif. Without the materiality of mangroves there would be no 'blue carbon', no trading on voluntary carbon markets of credits produced by communities in Kenya, no water distribution pipes in Gazi village. Counter conducts, being particular social or spatio-material relations, also shape the BE, in place. That is, they are a response to particularities of place as we see with the Save Lamu coalition in relation to Lamu Port development, where traditional resource uses were threatened leading to a reassertion of indigenous rights (through the device of a 'Biocultural Community Protocol') and a reterritorialisation of mis-appropriated lands through collective action: "If we fight individually we cannot be heard. So we formed this consortium" (SL). "So now the government have understood us and they invite us to their forums and allow us to make contributions. They attend our events and listen."

5.4. Rethinking Governance

I would like now to trace a connection between economy and place, and back to dispositif. I have, earlier in this paper, made the case that dispositif, as a set of bounded space-time relations, is constitutive of place and of subjects, based on an understanding of place and space derived from ancient Greek thought. Conceptions of place and space in ancient Greece involve the concepts of *choros* (the space that gives a place for being), *topos* (place as bounded openness) and *kenon* (open extension) as Malpas (2012) reminds us. The central social unit of ancient Greece was the family, *oikos* (the family members, the family's property including farm etc), and this evokes the home as a unit of space and of place, and a building block of the *polis* – the City State. Consequently, *Oikos* is the root of the word economy, *oikonomia* referring originally to household management, but gradually being extended to refer to the rational management of resources (Leshem, 2016), that is, to the study of human behaviour as regards the relationship between "ends and scarce means which have alternative uses" (ibid., p229). The end was of great concern, being the ability to both contribute to the *polis* and to support family. The concept of prudence was implicit in the recognition of the need to either increase income to match household needs or to reduce consumption. Thus, "the management of the *oikos* was guided by the ethical disposition that was deemed best-suited to facilitate the engagement of the head of the household in philosophy and politics" (ibid., p229). Economic theory discussed the surplus generated by the economy and "the means suited to achieve what was deemed the best ethical disposition." (ibid., p230). Dispositif is about the 'disposition' of its elements to achieve certain aims, so this 'ethical disposition' can be thought of as a dispositif for economic prudence, 'securing' the wellbeing of the family and the wider culture of the *polis*. Agamben's study of the etymology of dispositif is revealing, taking us back to the same classical understanding of economy. He recounts an earlier origin of the term dispositif than does Foucault, tracing it through its latin root *dispositio* to *oikonomia* (of which *dispositio* is the latin translation). He writes that 'Oikonomia signifies in Greek the administration of the oikos, the house, and, more generally, guidance/conduct, management. It concerns, as Aristotle says, not an epistemic paradigm, but a practice, a practical activity which must from time to time confront a problem and a particular situation.' (cited in Bussolini, 2010: 104). Further, Agamben situates *oikonomia/dispositio* in a Christian discourse of God's providential management of man and the earth's resources, a 'divine economy', and asserts that it is central to understanding the managing activity of governmentality and also, I argue, the function of the dispositif.

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This connection of dispositif with *oikonomia* opens interesting possibilities for rethinking governance through dispositif. To avail ourselves of this opportunity I look to discourses of economy in the classical period, the end of which marked an etymological and ontological transition from *œconomy* to *economy*. In the C17th '*œconomy'* meant the art of managing people and things through the relations between them. It was closely tied to Christianity and God's providence for humankind in the form of natural resources - a natural moral economy (Gammon, 2010). The botanist Carl von Linneus (1707-1778) wrote of the principles of œconomy being based on natural sciences and physics - it is the "art of preparing natural things for our own use, the art of making use of all Nature's goods." (cited in Calame, 2009). Malpas, in setting out his arguments regarding the relational nature of place - as a bounded space-time - explains a shift in modern thinking regarding the meaning of space and its conceptual dissociation from place, through its being thought of as pure extension (*kenon*) and thus excluding the possibility of space as bounded, as space contained (*choros*). This arises from an increasing emphasis on physical theory (Malpas, 2012). There are parallels here with the emergence of modern conceptions of economics, being an embrace of the physical and mathematical, and a rejection of natural law as the basis for the political economy (See Calame, 2009; Gammon, 2010; Alonzi, 2021). Consequently, the modern global capitalist economy has, I suggest, become *place-less* – that is, divorced from the natural elements, through for example, the production of abstract commodities (e.g. carbon credits, Debt for Nature swaps, Smith, 2007 - cf Marx's 'subsumption of nature[8]' and 'metabolic rift[9]', Graham, 2020: ch3; 'second contradiction of capitalism[10]', O'Connor, 1988) and forces of 'things in place' - their boundedness and movement – and instead operates in the mode of an unbounded, abstract extension as the 'global marketplace'. Thus, free trade, capital mobility, global value chains connecting distant markets, etc., operate with little reference to or connection to place (cf Polanyi on the dislocation of the market economy from traditional society and social relations. Polanyi, 1944) and so fail to acknowledge the particularities of place (as social/natural relations) and consequently reinforce unsustainable demands on natural resources. Today, the inequalities that this globalised, capitalist system ultimately produced are the topic of much debate and scholarship. At a macro-level, concepts such as degrowth, post-growth and steady-state economies have been proffered as alternative paradigms (Koch, 2015). At a micro-level, attention has turned to how capitalist economies might be organised differently and towards more equitable outcomes. Cooperative enterprises, and traditional economic systems feature in this debate. Gibson-Graham (2008) proposes a 'diverse economies' framework to envision and to document a 'more-than-capitalist' world of alternative and ethical ways of living (Gibson-Graham and Dombroski, 2020). Said and MacMillan (2020), commenting on BE relations in Malta, suggest alternative and ethical economic models could co-exist alongside the capitalist blue economy, given adequate protections.

6. Conclusion: A Blue Œconomy

In this spirit, I conclude this paper with a proposal for an alternative model for the BE which, borrowing from Calame (2009), I call a *blue œconomy*. Its inspiration is the classical understanding of *œconomy* (both an *œconomy* of the home, and a political *œconomy* of the State) and its prudent use of

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[8] Subsumption of nature is an extension of Marx's thesis on the subsumption of labour by capital. It refers to the entraining of nature into the capitalist processes of accumulation as with, for example, financialised abstractions such as nature or carbon credits.

[9] Metabolic rift refers to Marx's observation that the capitalist society concentrated populations in towns and factories. These growing populations were dependent on distant agricultural production which itself had become dependent on distant natural (e.g. sources of phosphate to boost fertility) and technological (e.g. labour saving machinery) resources.

[10] The second contradiction is that the conditions of production - human labour power, nature (or environment), and space (or infrastructure) - are things that are traded as if they were commodities, even though they are not produced as commodities.

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natural resources to meet essential human needs, but not to excess. In this it is an ethical paradigm, embodying social and environmental justice, and one rooted in 'place', in the bounded space-time relations that mark out one community from the next. This would be a 'small' and local economy, respecting the boundedness of spatial relations in the physical world. It would embrace various aspects of time - taking place, change, movement, coming into being - enabling adaptations to uncertainty, innovation (to adapt to change), and resilience. A BE dispositif based on principles of *œconomy* would aim for community-based management, an 'ethical disposition' towards natural resources such that essential needs of all are met, but through prudent management waste and over-exploitation are avoided. This is a place-based approach, in which familial and community ties generate a co-responsibility between resource users to utilise resources equitably (both in space and time) so that present and future needs of the community are met. Demands reflect what resources are available in that place - lifestyles and livelihoods are shaped by the landscapes and resources within which the community resides (its *oikos*), rather than by global consumer and market trends. Over time, as resource availability and community needs change, the principle of prudence ensures that communities adapt their lifestyles and livelihoods to maintain equity within and between communities. National and Regional policy would create enabling measures for community-led management, and provide the mechanisms for inter-community equity, so ensuring resource sustainability.

In order to implement a *blue œconomy* resources should be invested at community level. Guided by principles of prudence and equity, communities should be given responsibility for managing their own *oikos* through forms of co-management – access to resources and knowledge, and collaborative governance arrangements - the foundation of a *blue œconomy* dispositif. The benefits of the *blue œconomy* should be shared and invested for the benefit of all, fostering practices of mutual support and care. Prudence suggests adaptation as resource availability or demands on it change. Therefore, communities need the capacities to adapt to change, to innovate, and to adapt practices based on a deep understanding of community-resource relations in space and time. We can see elements of this vision in the cases analysed herein, in Gazi, Watamu, Lamu and Paté. Co-management arrangements – community forest associations and management agreements; locally managed marine areas; community conservancies – provide the basis for a *blue œconomy* in Kenya. In the Mikoko Pamoja project, revenues from carbon credits generated by community action to conserve their local mangrove forest are used to invest in community infrastructure (distribution pipes and access points to provide better access to safe, clean drinking water. GComm). In Watamu (Debaso creek 'Crab Shack' and Prawn Lake), the initial coming together to address shared concerns regarding over-exploitation of the mangrove for firewood, has led to the emergence of community-led enterprises (through processes of innovation and adaptation) which not only act to conserve mangrove resources but also employ people, and generate dividends for those who have invested time, money and resources in the enterprise (ENT 1 & 2). On Paté Island, in response to over-fishing, the community tested and adopted a closed season to enable octopus stocks to recover between harvests (PIMCC 1, 2 & 3). Communities in Lamu have joined forces, in the Save Lamu alliance, to defend their historic rights to land and natural resources in the face of a distant governmental project poorly informed of their needs (SL).

However, in arguing for a community-scale BE, I do not argue *against* the need for national and regional BE policy. On the contrary, the ecosystems on which communities depend for resources extend beyond individual communities and beyond State boundaries. Coordination of policy is necessary at a range of scales in response to the spatial characteristics of ocean resources, and the collaborative rationality of ocean governance described in [*insert author references*] remains vital. New technologies create new possibilities for exploitation of the ocean's natural wealth, but these may of necessity operate at scales incommensurate with community capacities. Offshore wind power is an obvious example, for which technological and capital demands are intense. Further, the global economy cannot be ignored. The demand of international markets, the mobility of capital, the near-ubiquity of IUU fishing, to cite just some examples, present systemic risks to the community-scale BE vision. Gibson-Graham's (2008) 'diverse economies' represents a framework within which distinctive

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cultural approaches to natural resource management are acknowledged and valued. Widespread application of co-management in a *blue œconomy* model, as a mechanism to secure community use rights for resources such as mangrove forest, coral reef fisheries etc *and* to give communities a stake in maritime infrastructure such as energy and port facilities, would secure food and livelihoods for coastal communities. Governmental technologies such as marine spatial planning, equitably deployed, could provide mechanisms to resolve conflict, i.e. to prevent insecurity, between community and more industrial uses of ocean resources. Authorities should ensure that a BE policy is attuned to the variations in scale at which decisions are made (community, national, regional, global) and how the consequent territorialisations of BE intersect. In short, to afford the spatio-material relations of place more prominence.

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Appendix 1

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