THE ROLE OF OCEAN POLICIES IN POVERTY REDUCTION

INSIGHTS FROM CAPE VERDE, PORTUGAL AND SÃO TOMÉ E PRÍNCIPE

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Dedication

To Ana, Clara, Maria and Francisco.

In loving memory of my grandmother Maria José Ventura dos Santos (1923-2010).

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Responsibility for errors and omissions remains solely with me.

Gonçalo Carneiro

June 2011

Declaration

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

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This thesis is being submitted in partial fulfilment of the requirements for the degree of PhD.

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This thesis is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by explicit references.

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Summary of the Thesis

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Summary of the Thesis:

This study investigates the role played by ocean and coastal resource management interventions in national poverty reduction efforts in Cape Verde, Portugal and São Tomé e Príncipe. It reviews the main ocean sectors of these countries and the respective policies. It also discusses the poverty situation in each country and analyses the respective strategies in terms of their linkages with ocean sectors. A comparative analysis of the findings from the individual cases is provided.

A review of the concept of poverty highlights the implications of its threshold effect. An account is provided of the evolution of the concept towards multi-dimensionality and of the implications of this process for policy-making and the unstable use of the term.

The published evidence relative to impacts of ocean management interventions on human well-being is analysed. It is concluded that this evidence is currently limited and only rarely comparable across different settings, a consequence of the application of different methods to evaluate distinct dimensions of well-being. No such evidence exists from any of the study countries. The importance of expanding the existing body of evidence is highlighted.

This study concludes that poverty is awarded limited attention in the ocean sectors of the three countries. Similarly, the actual and potential contribution of these sectors to poverty reduction is poorly explored in poverty reduction instruments. Where poverty is explicitly linked to ocean activities, it is often conceptualised in terms of income, employment and nutrition alone, leaving out other relevant dimensions of well-being. This reflects on the proposed ocean policy measures. It was found that these are also conditioned by other societal imperatives, notably those related to the conservation of resources, and, more importantly, by objectives relating to the management of ocean activities.

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Abbreviations

ACD - *Associação Comunitária de Desenvolvimento* (Community Development Association, Cape Verde)

ANP – *Agência Nacional do Petróleo de São Tomé e Príncipe* (National Petroleum Agency of São Tomé e Príncipe)

BV – Boavista, alt. Boa Vista (island of, Cape Verde)

CEC – Commission of the European Communities (alt. European Commission)

CFP – Common Fisheries Policy (of the European Union)

CPADRP - *Carta de Política Agrícola, Desenvolvimento Rural e Pescas (*Policy Charter for Agriculture, Rural Development and Fisheries, São Tomé e Príncipe)

CPLP - *Comunidade dos Países de Língua Portuguesa* (Community of Portuguese-Speaking Countries)

CRP - *Comissão Regional de Parceiros* (Regional Partners Commission, Cape Verde)

CV – Cape Verde

DECRP - *Documento de Estratégia de Crescimento e Redução de Pobreza (*Growth and Poverty Reduction Strategy Document, Cape Verde)

DGP – *Direcção Geral das Pesca* (Directorate-General for Fisheries)

DWT – Dead-weight Tonnage

EC – European Community

EEZ – Exclusive Economic Zone

EFF – European Fisheries Fund

EITI – Extractive Industries Transparency Initiative

ENCNB - *Estratégia Nacional de Conservação da Natureza e da Biodiversidade (*National Strategy for Conservation of Nature and Biodiversity, Portugal)

EU – European Union

FAD – Fish Aggregating Device

FAIMO - *Frentes de Alta Intensidade de Mão-de-Obra* (Labour-intensive public works schemes, Cape Verde)

FAO – Food and Agriculture Organization of the United Nations

GAC – *Grupo de Acção Costeira* (Coastal [Fisheries Local] Action Group)

GNP – Gross National Product (alt. GDP – Gross Domestic Product)

ICCAT – International Commission for the Conservation of Atlantic Tuna

ICNB - *Instituto da Conservação da Natureza e da Biodiversidade* (Institute for Nature Conservation and Biodiversity, Portugal)

IFAD – International Fund for Agricultural Development

ILO – International Labour Organisation

IMAP-STP - *Instituto Marítimo-Portuário de São Tomé e Príncipe* (Maritime and Port Institute, São Tomé e Príncipe)

IMF – International Monetary Fund

IMO – International Maritime Organization

INDP – *Instituto Nacional de Desenvolvimento das Pescas* (National Fisheries Development Institute, Cape Verde)

IPTM - *Instituto Portuário e dos Transportes Marítimos* (Port and Maritime Transport Institute, Portugal)

JDZ – Joint Development Zone

LSMP – Luiz Saldanha Marine Park

MA – Maio (island of, Cape Verde)

MDG – Millennium Development Goal

OESMP - *Orientações Estratégicas para o Sector Marítimo-Portuário* (Strategic Guidelines for the Maritime-Port Sector, Portugal)

PDP – *Plano Director das Pescas* (Fisheries Master Plan, São Tomé e Príncipe)

PEN-P - *Plano Estratégico Nacional - Pesca* (National Fisheries Strategic Plan, Portugal)

PET – *Plano Estratégico de Transportes* (Strategic Plan for Transports, Cape Verde)

PGRP – *Plano de Gestão dos Recursos da Pesca* (Fishery Resources Management Plan, Cape Verde)

PIRP – *Programa Integrado de Reestruturação da Pesca* (Integrated Programme for Restructuring of Fisheries, São Tomé e Príncipe)

PLPR - *Programa de Luta contra a Pobreza Rural* (Rural Poverty Alleviation Programme, Cape Verde)

PNAI - *Plano Nacional de Acção para a Inclusão* (National Action Plans for Inclusion, Portugal)

PNE – *Plano Nacional de Emprego* (National Action Plan for Employment, Portugal)

PNLP - *Programa Nacional de Luta contra a Pobreza* (National Poverty Alleviation Programme, Cape Verde)

PO-P – *Plano Operacional – Pesca* (Fisheries Operational Plan, Portugal)

PSSA – Particularly Sensitive Sea Area

PT – Portugal

QUIBB - *Questionário Unificado de Indicadores Básicos de Bem-estar* (Unified Questionnaire of Basic Well-being Indicators, Cape Verde)

OHCHR – (United Nations) Office of the High Commissioner for Human Rights

RFMO – Regional Fisheries Management Organisation

sq. km – square kilometres

SA – Santo Antão (island of, Cape Verde)

SL – Sal (island of, Cape Verde)

SN – São Nicolau (island of, Cape Verde)

ST – Santiago (island of, Cape Verde)

STP – São Tomé e Príncipe

SV – São Vicente (island of, Cape Verde)

TEU – Twenty-foot Equivalent Unit

UN – United Nations

UNDP – United Nations Development Programme

USD – United States Dollars

ZDTI – *Zona de Desenvolvimento Turístico Integral* (Integrated Tourism Development Zone)

PART I

1. Introduction

1.1 Rationale of the Research

> "[A]ll justification of policy is ultimately moral justification [...]."
>
> (Swift, 2006, p.139)

On November 2nd 2007 a resolution on the development of a common oceans policy was adopted at the ministerial meeting of the Community of Portuguese-Speaking Countries (CPLP, *Comunidade dos Países de Língua Portuguesa*).[1] As with many other post-Rio ocean policy statements, it postulated a holistic approach to ocean management, recognising that "the seas under national jurisdiction of CPLP member-states are a source of natural resources that may contribute to their socio-economic development [...]" (CPLP, 2007, p.1). This recognition has important consequences for how people – usually represented by the state – choose to manage those resources. In particular, the question worth raising is how to balance different societal objectives in the design of public policies, in this case those for ocean spaces and resources. In particular, should ocean resources management policies, in addition to addressing sector-specific issues, also attend to concerns with socio-economic development, human well-being and poverty reduction?

To answer this question, the quoted statement by Adam Swift provides a reference notion: political action is concerned with decisions regarding how people's lives should be lived, and hence political decisions have their justification in a (moral) conception of what should be a "humanly-lived life" (Bruto da Costa, 1971, p.10). Certainly Swift was thinking of fundamental domains of state organisation – justice, representativeness, liberty – and not of ocean management policies, but his assertion is equally valid here, for the two following reasons.

[1] The member states of the CPLP are, in alphabetical order: Angola, Brazil, Cape Verde, Guinea-Bissau, Mozambique, Portugal, São Tomé e Príncipe and Timor-Leste. For the text of the oceans policy resolution, see Comunidade dos Países de Língual Portuguesa (CPLP, 2007). Despite representing several years of high-level diplomatic and technical work, the resolution itself is a rather uncompromising document. Some of the preparatory work was carried out at the Ocean Policy Summit in Lisbon in 2005, and at the Third Global Conference on Oceans, Coasts and Islands in Paris in 2006. The author is grateful to Isabel Torres de Noronha for insights on this process.

Firstly, because humans engage with natural resources – an engagement that justifies policy measures to control that very engagement, most often in view of protecting the resources – predominantly with the purpose of achieving a satisfactory level of well-being. People fish because they need to eat, and carry goods by sea because the profit they maket enables them to achieve 'states of being' they have reason to value (see Sen, 1983, 1993). Hence, the design of those policy measures should take into consideration the fundamental functions that the activity has for human well-being.

Secondly, and looking from the top end of the political-state hierarchy, a state's first and foremost motivation in regulating people's lives is to provide them with the broadest possible range of opportunities to satisfy their well-being needs. This motivation comes out most clearly in state interventions in one of the fundamental domains mentioned above, or even in those relating to economic, social and cultural development. But it extends also to more marginal policy areas, and often explicitly, as in the case of the CPLP ocean policy resolution. It is precisely the extent to which such motivation permeates ocean policy-making that constitutes the central concern of this work. In particular, because it is the absence of well-being that is specially relevant for public policy, the specific issue of poverty is emphasised in this work. In slightly different terms, what this investigation then addresses is how and how much ocean policies give effect to objectives related to human well-being and poverty reduction.

1.2 Research Question and Objectives

This research is guided by a set of questions – enunciated here and elaborated below, in the form of objectives – rather than by a clear hypothesis. This work is thus more exploratory than postulative.

The central research questions animating this investigation are:

- How are policies relative to the management of ocean resources being designed and implemented in view of contributing to national efforts for poverty reduction?
- How well aligned are policies and interventions in those two policy domains, in view of maximising the poverty reduction potential of ocean resource management interventions?

Given the option for a case-study approach in this investigation, a third question may be enunciated:

- How do the experiences in the three study countries compare?

The aim of this research – which can be defined as 'to explore the manner in which ocean policies in three lusophone countries contribute to national poverty reduction efforts' – encompasses the following objectives:

- To review, analyse and document the defining characteristics of important ocean sectors in the study countries;
- To identify and discuss the most pertinent socio-economic aspects in these sectors;
- To review the poverty situation in each country, to the extent possible focusing on that of people whose livelihood depends on access to and use of ocean and coastal resources;
- To analyse policies and related interventions in the areas of ocean resource management and poverty reduction in each country, and to assess the extent to which the respective proposals align;
- To discuss, relative to ocean policies, how the respective proposals address and impact on the poverty and well-being status of affected populations; and
- To compare the approaches and experiences of the three countries in using ocean policies to combat poverty and advance human well-being.

1.3 Case-study Approach

The research question enunciated above is answered by considering the specific cases of three CPLP member-states, namely Cape Verde (CV), Portugal and São Tomé e Príncipe (STP). This approach is preferred over an exclusively conceptual treatment of the theme for two main reasons. First, it enables the analysis of that relationship within the frame of the historical, socio-economic and political setting in each country. The former two are critical elements in shaping societal structures and in determining which future development opportunities lie open for a society. The political setting, in turn, very much determines the 'morality' that justifies political action. In the context of applied research and, in particular, for the purpose of informing policy-making, it is of greater usefulness to consider the influence of that setting on the research theme. In brief, a case-study enables the investigation of "a contemporary phenomenon within its real-life context" (Yin, 1984, p.23).

A second, weaker argument is that case-specific analysis enables the documentation of the situation in the study countries. This is important both for purposes of comparative policy analysis, and, on a more elementary level, to expand the body of literature relative to the countries in question. This is particularly relevant in the cases of CV and STP, two countries that are poorly represented in international literature in the English language.

As for the selection of study countries, the author's nationality and early hopes that the CPLP ocean policy initiative would bear fruits – which, as of January 2011, it has not – dictated that the choice would fall on CPLP member-states. A key criterion here was that the author master the language of the study countries – both the official language and the language people actually speak – so as to be capable of fully engaging with necessary documentation and with nationals of those countries. Given time and resource constraints it was not viable to encompass all CPLP states, and instead the choice fell of the mentioned three countries, for the following reasons.

- The three countries represent three distinct levels of wealth and development, not only in society on the whole, but also in their ocean-related sectors, with STP at the bottom, CV in the middle and Portugal at the top of the income-development ladder;
- All three countries are small enough to allow their territorial and socio-cultural diversity to be grasped with limited travelling; and
- All three are politically and socially stable, which has enabled ocean sectors and the respective political institutions, as well as social development initiatives to develop. A certain level of security also determined the ease with which research in the field could be conducted.

A final word on the choice of ocean sectors analysed in the case-studies. Although, as mentioned in the beginning of this chapter, this investigation was partly triggered by the CPLP initiative for a holistic ocean policy, it soon became clear that within the CPLP only Brazil and Portugal had developed policies of this kind. Hence the author opted for considering sector policies related to the ocean that were present in all three countries, thus enabling a replication logic to be followed in the investigation (see Yin, 1984). In particular those sectors of greatest socio-economic expression in the three study countries were selected, namely fisheries,

maritime transport and marine and coastal conservation, which in CV is discussed from the perspective of coastal tourism. Offshore oil exploration in Santomean waters is also discussed, although rather briefly, more for its presence in the media and top-level political circles than for its socio-economic relevance, which is, as yet, negligible.

1.4 Methodology

For this investigation, analyses were conducted at three distinct levels. The first level consisted in the review of published and unpublished literature relative to the topics discussed in the different sections of this thesis. Chapters two and three result exclusively from analyses of this type.

The majority of scientific publications were obtained from document repositories through the library services at Cardiff University using keyword-based searches. References contained in the literature retrieved in this manner were consulted and included in the analysis whenever they were deemed relevant for the theme being analysed. Most of the non-peer-reviewed publications selected through this process were retrieved from open repositories on the world-wide web.

Specifically, for the review in chapter two, searches combined keywords such as 'definition', 'concept', 'conceptualisation', 'poverty', 'human development', 'well-being', as well as the designations of each of the approaches to the conceptualisation of poverty reviewed in sections 2.3.1 to 2.3.6. For the review in chapter three, keywords used included 'evidence', 'impact', 'assessment', 'evaluation', 'well-being', 'human development' and 'poverty', as well as the designation of each of the sectors considered in the review. The contents of the papers retrieved in this manner were then analysed in terms of i) the dimensions of human well-being considered; ii) the origin and the type of data reported; and iii) the nature and the magnitude of the impacts detected. For each of the case-studies, documents were retrieved by separately searching for the name of each country in combination with keywords relative to marine and coastal activities, such as 'ocean', 'marine', 'coastal', 'maritime', 'fishing', 'fisheries', 'fishermen', 'shipping', 'ports', 'marine protected areas', or 'tourism'. Because much of the literature on these countries is in the Portuguese and French languages, these searches were repeated with the Portuguese and French translations of these keywords. For the case-studies, a higher proportion of this literature was retrieved from open repositories on the world-wide web than from

databases of scientific literature, as not much documentation on the studied countries is found in the latter. In a limited number of cases, unpublished documents were obtained from the respective authors.

The second level of inquiry in this investigation was the study of the contents of policy and legal documents pertaining to the selected ocean sectors and to poverty reduction in each of the study countries. These documents, which constituted the primary data for this analysis, were obtained from the following sources. Policy documents were either retrieved from the internet websites of the respective ministries or state agencies in each of the countries, or, if unavailable there, were obtained directly from representatives of these institutions during interviews conducted by the author. Legal documents were retrieved i) from the official online repositories in the websites of the national gazettes, in the cases of PT and CV (after 2007); ii) from the database of legal documents of the Food and Agriculture Organization of the United Nations (FAO; Faolex database, http://faolex.fao.org); and iii) collected by the author in the national archives in Praia, ST, CV and in São Tomé, STP. The documents analysed were those in force at the time of writing, complemented, as appropriate, by earlier documents, so as to reflect developments in the course of the last decade.

Also of relevance for this level of inquiry were semi-structured interviews conducted by the author with individuals involved in the ocean sectors and in poverty reduction programmes in the three countries. The majority of interviews were conducted in November 2009 in Sesimbra and Setúbal in Portugal, and in January 2010 in CV and STP, with sporadic contacts with some of the interviewees before and after these dates. In particular in Portugal, which the author visited regularly, contacts with interviewees took place over a period stretching from late 2008 to early 2011.

As detailed further in Annex I, part of the aim of these interviews was to gather information and clarify specific issues relating to the ocean policies and related management interventions in each of the study countries. To this end, meetings were booked with the highest representative of institutions in each country that dealt with ocean resource management, economic activities dependent on ocean and coastal resources and with poverty reduction interventions. Examples included state organs responsible for fisheries, maritime transport and ports, marine conservation, as well as for development and poverty reduction planning. In STP,

the national agency responsible for petroleum exploration was also contacted, as was the administration of the Luiz Saldanha Marine Park (LSMP) in Portugal, for the respective case-study (see section 5.5). Contacts were established by telephone, e-mail and letter, depending on the situation. Where the targeted persons were unavailable for an interview, the author accepted the proposed substitute. This list of pre-booked interviews was complemented with other contacts suggested by some of the interviewees themselves. In these cases, all contacts were established by telephone. The list of interviewees is found in Table 13, in Annex I.

Written notes were taken by the author during the interviews, and detailed summaries were produced accordingly. These summaries were then used for the descriptions and analyses in this study. Follow-up contacts were established with some interviewees, with the aims of clarifying specific points or requesting additional documentation.

The third and final level of inquiry consisted in the analysis of ocean sectors and of the poverty situation in the study countries. The starting point for this analysis was the literature review described earlier in this section. Another source were sector descriptions and analyses contained in some of the policy documents mentioned above. These two sources of secondary data were complemented by primary data from interviews and field observations. In respect of the former, the authors consulted representatives both from state organs responsible for the different sectors (as described above) and from non-state organisations active or otherwise linked to the studied sectors. In some instances, individuals with experience and knowledge from the sectors and not representing any particular organisation were also consulted.

In respect of field observations, the author travelled the three countries to observe activities in the respective ocean sectors (except in the Santomean petroleum sector, given the impossibility of visiting the joint development zone with Nigeria, where developments are currently taking place; see section 6.5). In regards to poverty conditions, observations by the author were largely restricted to externally visible manifestations of well-being, such as housing conditions, material wealth, availability of public services and, to some extent, access to natural resources.

Potential bias in the information provided by interviewees was controlled for by means of two distinct strategies. First, the same or very similar questions were posed to different

interviewees, so as to gather different views on any given matter. Because interviewees represented, in as much as possible, different stakeholder groups in each sector – including state planners and regulators, economic agents, and non-governmental and civil society organisations, among which professional associations – it is assumed that the different views on the studied subjects have been captured. In some instances, interviewees were asked to comment on information provided by others. This strategy was applied more extensively in the LSMP case-study, given the dominant role that differences in perceptions play in the relations between the park's different stakeholders.

The second strategy was to check the information collected from interviews against published material not authored by the interviewee, and, in a smaller number of instances, against the author's own observations. These, in turn, were checked against data published in the available literature.

On the whole, the strategy to reduce bias in the collection and interpretation of interview data has been to consult as many different sources as possible on any of the studied subjects. This is, by and large, the strategy also used for ascertaining the veracity of information contained in published material, in particular that which is not peer-reviewed. In those instances where the author could not be convinced of the superiority of one type of information over another, the option was made to include both in this document. This is the case with data on fishery resources in CV and STP (sections 4.1 and 6.1, respectively) and with data on the opposing perceptions in the LSMP case-study (section 5.5).

1.5 Document Structure

This document is structured in the following manner. After this introduction, a review is conducted of the evolution and different interpretations of the concept of poverty, discussing how these interpretations have come to develop and coexist in today's development discourse. The chapter that follows is partly a review, partly an analysis of the evidence reported in scientific literature of the impacts of marine management interventions on human development. In the three ensuing chapters the case-studies are reported. All adopt a similar structure, in that a description of the main ocean sectors and a review of the respective policy intervention precede an analysis of the poverty situation and the respective reduction strategy. There follows a comparative analysis of the situation in the three countries relative to the

adopted perspective on poverty, the role assigned to ocean sectors in poverty reduction efforts, and the evaluation of well-being and poverty impacts of ocean policies. A conclusion closes this document.

Some of the work conducted for this research has been published or submitted for publication in international peer-reviewed publications, modified excerpts of which have been used in different parts of this document. These publications are listed in Annex II.

1.6 Definitions

Clarification is due on the meaning ascribed to certain terms in this document.

"Fishermen" refers to both men and women engaged in fishing and is preferred over the more gender-neutral "fisher(s)" because of its broader usage in the literature on fisheries.

"Marine" refers to what is or happens *in* the water, whereas "maritime" to what is or happens *on* the water. In regards to this latter term, an attempt has been made to reserve it exclusively for more traditional formulations, namely 'maritime (transport) sector' to refer to the shipping, port and related sectors (for example ship-building), and 'maritime tourism', to refer to tourism activities at sea.

"Ocean policy" is used here as an aggregate term referring, rather loosely, to policies and related interventions for activities that directly exploit ocean and coastal resources, including here the use of ocean and coastal spaces.[2] These activities are collectively termed "ocean activities." Hence 'ocean policies' encompasses a country's policies for fisheries, maritime transport, marine and coastal conservation, among others, as well as integrated ocean policies which, as explained above, have not been analysed in this work. In the case-studies, it refers to the sector policies analysed in each case.

"Poverty", "human development" and "well-being" are sometimes used interchangeably, the former broadly referring to deprivation in the latter two and not only to monetary deprivation. A more in-depth review of the first term, as well as of 'human development' as a framework for conceptualising poverty, is presented in the next chapter. 'Human development' is used more frequently in chapter three because this is a more common formulation in the reviewed literature than 'human well-being'.

[2] An equivalent term found in international literature is 'marine policy'.

2. The Concept of Poverty

> "Poverty is unavoidably a value-laden concept about which there is and should be considerable tension as each generation struggles with defining and measuring it anew to bring it into closer conformity to its own values and premises."
>
> (O'Boyle, 1999, p.295)

This chapter is concerned with the meaning of the word 'poverty'. First it will be discussed why this concern and the ensuing reflection are important, and how issues of meaning and measurement of poverty influence each other. Then an overview will be provided of the evolution over time of the concept of poverty. The third section reviews the different approaches to the concept of poverty. A summary of key issues closes this chapter.

2.1 The Need for Clarification and the Issue of Measurement

To whom is it important to know who are the poor? Arguably not the poor themselves. Poor and non-poor alike are to differing degrees concerned with their subsistence and all it entails, and the eventuality of being placed on either side of a poverty threshold is only relevant to the extent that such placement impacts on that very subsistence.

Defining poverty is important because it precedes the process of identifying and counting the poor (Ruggeri-Laderchi *et al.*, 2003; Kanbur & Squire, 1999). Defining its meaning implies identifying the dimensions – in other words, the domains or space – in which poverty is to be investigated, to wit, the aspects of a person's life that are relevant for the classification as poor or non-poor. Once these domains are established, the performance and the relative ranking of individuals and of society as a whole may be assessed in that space. It is this assessment that then forms the basis for poverty reduction interventions. Hence the choice of domains, that is to say, the way in which poverty is defined, determines how poverty is addressed and how the lives of those identified as poor are affected. How poverty is defined matters for poverty policy making (Misturelli & Heffernan, 2010; Capucha, 2005; Ruggeri-Laderchi *et al.*, 2003), or, as Kanbur and Squire (1999, p.30) put it: "the way in which poverty is defined drives the strategy for dealing with it." Going back to the initial paragraph, this is the process through which defining poverty and counting the poor acquires relevance for the poor themselves.

Agreeing on a definition of poverty also has analytical implications, primarily because the dimensions used to define poverty very much determine the choice of methodology and indicators for measurement (Ruggeri-Laderchi *et al.*, 2003; see also Sumner, 2004; Callan & Nolan, 1991).

For what reasons should one attempt to measure poverty? Wolf Scott's (1981) reflection on the meaning and measurement of poverty opens with the statement that "[p]overty need not always be measured; it needs to be prevented and abolished" (p.1). He was presumably thinking of the relative moral priority that poverty reduction should have over poverty measurement, arguing that investments in detailed measures should be balanced against the respective benefits in terms of poverty eradication. It is precisely this latter imperative that justifies the concern with measuring poverty: "[...] the sole valid justification for measuring poverty stems from the moral and political imperative that action should be taken to eliminate it" (Lister, 2004, p.37). In order to do so, measurement needs to identify – that is, to demarcate from the remaining reality(ies) – and to qualify – that is, to describe the characteristics – the phenomenon of poverty. While qualification is predominantly an issue of measurement, identification is not. It is preceded and determined by a definition of poverty, and hence is an issue of the principled position relative to the acceptable degree of fulfilment in fundamental domains of human life.

The apparent continuum between identification and qualification actually hides an important practical division, recently highlighted by Rosenfield (2010, p.16), when discussing the setting of poverty thresholds: "Mostly, we social scientists know poverty when we see it. We have not mastered the ability to measure where it starts in our large-scale survey." Indeed, the polysemous and elastic usage of the word poverty (Capucha, 2005) allows substantial discretion in how it is applied to distinguish different situations. Because poverty can mean different things, so can a varied array of situations be identified as representing poverty. It is precisely this instability in meaning (Misturelli & Heffernan, 2010) that in part is to blame for the difficulties in qualifying poverty. This is compounded by the fact that available measurement techniques and data sets often prove inadequate for objectively identifying and qualifying poverty according to some of the broader definitions of this concept (Thorbecke, 2005; Sumner, 2004; Kanbur, 2003). This issue will be elaborated further in the last section of this chapter.

The majority of poverty measurements are concerned with its incidence and distribution. Information is sought on who and where are the poor, so classified as per a set of indicators

designed to capture the domains that illustrate the adopted definition of poverty. This typically involves the establishment of a poverty threshold line, a requirement that is of fundamental conceptual significance. Incidence and distribution of poverty then result from the count of individuals or households on the poverty-side of that line, per spatial unit (country, region, city, etc.). Another common measure is that of depth of poverty, or poverty gap, representing an individual's, a household's or a population's shortfall relative to the poverty line. A related measure, poverty severity, combines the poverty gap with a measure of inequality among the poor.

Finally, a few words on the mutual influence of concept and measurement of poverty. It has been argued that how one defines poverty determines the choice of poverty indicators, and hence, what is measured. But the reciprocal is is also true, at least in part. On one hand, limitations to poverty measurement may and do impair the full understanding of certain theoretical frameworks. Sumner (2004) drew attention to this, alluding to the perniciousness of the 'economic imperialism', that is, the dominance of economics over other social sciences in poverty research, something that has been felt most acutely in the choice of methodologies and measures. This dominance has led to poverty generally being understood in economic terms. Ruth Lister (2004, p.38) goes further to argue that the undue focus on what is easily measurable may actually "suppress other forms of poverty knowledge." On the other hand, in one of the earlier papers attempting to measure human capabilities as per Sen's capability approach, Anand and van Hees (2006) posit that empirical research may help understand the underlying theory, resolving theoretical ambiguities and better assessing some of the conceptual controversies surrounding it. That these authors were among the first to address the operationalisation of the core of the capability approach, more than two decades after the respective conceptual foundations had been laid, says much of the difficulties of devising methods to measure multi-dimensional poverty (Kanbur & Squire, 1999; see also Kanbur, 2003). But their attempt at doing so has certainly contributed to a better understanding of the underlying conceptual construct.

2.2 An Evolving Concept

In a synthesis of the work of a fellow countryman who had scrutinised the different meanings of poverty in the archives of the Spanish Royal Academy, Jordi Estivill (2003, p.10) suggests three generic utilisations of that word: 'to have little', 'to be worth little' and 'to have bad luck'.

How much have these meanings changed and, in particular, what elaborations thereof have been proposed in the course of the historical analysis of poverty?

It is not uncommon that descriptions of the evolution of the meaning of poverty begin their narrative in the period immediately after the second World War and then trace that evolution in a linear fashion up to the present (Maxwell, 1999a; Sumner, 2004; Green, 2006). The choice for the post-war period as the starting point results from the prominence that the concept acquired during the second half of the twentieth century, in political and academic circles alike. This coincided with the advent of the international doctrine on socio-economic development: "[the end of World War II] marked the beginning of serious interest among scholars and policy-makers in studying and understanding better the development process as a basis for designing appropriate development policies and strategies" (Thorbecke, 2006, p.1). If, indeed, the post-war inaugurated the boom of research on poverty, it is the works of Charles Booth and Seebohm Rowntree, in London in 1889 and York in 1901, respectively, that are often cited as the first empirical studies on poverty. The concept, however, has been around since unmemorable times, as have concerns for the living conditions of the poor (Townsend, 2006).

Citing Foucault and somehow opposing linear narratives of poverty in the works of other authors, Misturelli and Heffernan (2010, p.1) recall that discourse is never constructed in a singular, disjointed manner, and that by doing so one potentially conceals "more-subtle changes indicating shifts in thinking." Somewhat surprisingly, the authors base their study on a linear temporal analysis of the meaning of poverty arriving at a number of clusters of meanings of poverty that characterise each of the selected temporal units. The result is in all comparable to the linear descriptions they had initially criticised. However, what the authors presumably opposed was the idea that, through linear narratives, different concepts of poverty would simply succeed and replace one another, or, that one single concept of poverty has been expanded through the years with the addition of ever more criteria from new conceptual approaches (Kanbur & Squire, 1999; Maxwell, 1999a). While there is some veracity in both perspectives, the reality is arguably one where different meanings of and approaches to the concept of poverty co-exist.

Returning to the historical evolution of the concept, Estivill (2003) states that poverty in the 19th century related to the survival needs of men and women, a notion that underlay the inaugural studies in Victorian England mentioned above. These concentrated on what were seen as the fundamental subsistence needs of that time. If, however, one considers Peter

Townsend's (2006) argument that, in the 1880s, the concept of relative deprivation already constituted a criterion for poverty analysis, it then becomes informative to look beyond the merely material notion of poverty and instead consider one of its most pungent manifestations, namely that of social exclusion. In this regard, Estivill (2003) recalls the numerous forms of segregation that have permeated history – ostracism in ancient Greece, proscription in ancient Rome, the inferior casts in India, slavery at the hands of colonial rulers, excommunion in the Christian church – and how these have been used to differentiate between ranks of people. Some of these forms were associated with dispossession and deprivation, as cause, consequence or both. Still, the author argues, these processes of exclusion were often not recognised as such, but instead justified as structural elements of multi-layered societies. It was with the progressive establishment of civil, political and social rights from the 18th century onwards that acceptance of structural segregation declined in all societies, albeit to differing extents. This latter fact has been made evident by the prevalence of purposely designed mechanisms of exclusion that confine certain individuals or groups to predetermined – often underprivileged – positions in society. The South African apartheid is but one famous example, an extreme expression of a pattern of exploitation that was common to much of the colonised world in the 19th and 20th centuries.[3]

The 20th century brought the establishment of the welfare state, "covering the main needs and risks of the population in the states of central Europe" (Estivill, 2003, p.6), as well as decolonisation and independence to most colonies, first to the Middle East and northern Africa, then South and South-East Asia and finally to Sub-Saharan Africa. But while the post-World War II period brought accelerated and cheap socio-economic and technological progress to North America, Europe and parts of Asia – initially Japan, and in the 1970s and 1980s also to nations in SE Asia – parts of the formerly colonised world, as well as much of Central and South America remained locked in relative underdevelopment and poverty. Hence, in the developed world, poverty was relegated to the bottom of the political priorities, eclipsed by the seemingly endless post-was prosperity (Townsend, 2010 [1962]; Rosenfield, 2010;; Amaro *et al.*, 2003). This was to be reversed in the late 1970s and early 1980s with the emergence of 'social exclusion' as a matter of concern for both politicians and academia in Europe (Capucha, 2005; Lister, 2004), a concept that has hitherto remained central to the anti-poverty discourse

[3] For a depiction of how labour relations, patterns of exploitation and economic objectives drove much of politics of colonial Africa, in particular South Africa, see Freund, 1984. An abridged account by the same author can be found in Freund, 1986.

in this continent. In the less affluent regions of the world, the widespread failure of newly decolonised, independent states to reverse their underdevelopment led to a global movement – steered and financed primarily by the governments of richer countries in Europe and North America – determined to assist the development of those countries, and ultimately to combat their poverty. From there followed the 'development doctrine' alluded to previously, as well as most of the conceptual developments of poverty that are known today.

Until the 1950s the dominant analytical dimension of poverty was that of physical subsistence, still much inspired by the initial investigations of Booth and Rowntree that had been based on nutritional and other physiological well-being requirements (Townsend, 2010 [1962]; Maxwell, 1999a). In this first decade after the second World War, development itself was depicted as GNP (Gross National Product) growth, and "other economic and social objectives were thought to be complementary to, if not resulting from, GNP growth" (Thorbecke, 2006, p.1). In this supposed era of "high development theory", the poor would see their lives improved through a mechanistic trickledown effect from economic growth and modernisation (Sumner, 2004, p.3).

Despite the profession, by development theorists of the 1960s, of a similar faith in the blessings of GNP growth, this decade witnessed a rising concern with broader notions of well-being (Sumner, 2004), championed by governments of the newly independent states and their attempted boosting of social services. This well-being was conceptualised primarily in material terms, although in this decade concerns started to emerge as to immaterial dimensions of well-being and poverty (Townsend, 2010 [1962]; Sumner, 2004).

The broadening of the conceptual space of poverty occurred in the transition from the 1960s to the 1970s with the elaboration of the 'basic needs' approach, where the satisfaction of needs such as nutrition, education, health, shelter and water, but also employment and leisure, among others (Streeten, 1984) was equated with well-being (Sumner, 2004). At the same time, Townsend advanced the conceptualisation of relative deprivation, drawing attention to the imperative of contextualising poverty in social and cultural terms (Maxwell, 1999a).[4] Misturelli and Heffernan (2010), while acknowledging the predominantly economic focus of the development discourse in the 1970s, identified the emergence of topics such as 'rights' and 'participation' in the course of this decade. However, the authors note that these were included in the bigger basket of basic needs that dominated thinking at the time.

[4] Peter Townsend's original formulation of 'relative deprivation' appeared in his 1979 book *Poverty in the United Kingdom*, Harmondsworth: Penguin Books (Townsend, 2010 [1962]).

According to Simon Maxwell (1999a, p.2), five innovations added "new layers of complexity" to the concept of poverty in the 1980s, contributing to the shift away from earlier 'economic determinism' (Sumner, 2004). These were: i) the incorporation of aspects of powerlessness and isolation, drawing greater attention to participation of the poor in social and political institutions; ii) the notion of vulnerability and the need to consider coping strategies; iii) the adoption of the broadly encompassing concept of 'livelihoods', taking into account the multidimensionality of the lives of the poor; iv) the presentation and elaboration of the 'capability approach' by Amartya Sen and followers; and v) the focus on gender dimensions of development and poverty. The development doctrine itself was still very much dominated by purely economic considerations (Thorbecke, 2006), and the 1980s will pass down in history as the decade of the infamous and often ill-fated structural adjustment programmes, conceived to bring order to the decaying economies of many poor states.

The 1990s saw a consolidation of conceptual developments initiated in the preceding decade. Sen's capability framework provided the basis for the first Human Development Report issued by the United Nations Development Programme (UNDP) in 1990. That same year the World Bank issued its second World Development Report on poverty, where the 'one dollar a day' metric was inaugurated as the international poverty threshold, indicating the continued prominence of GNP as a goal and measure of development. Participatory methods of poverty assessment gained in importance, having contributed to a deeper understanding of phenomena such as vulnerability and risk, as well as participation (Kanbur & Squire, 1999). Allowing the poor to define poverty themselves enriched the conceptual space, a recognition that culminated in the World Bank choosing to base its 2000/2001 World Development Report on a consultation with more than 60,000 poor people in 60 countries (World Bank, 2001). An important conceptual addition during the 1990s was the progressive development of the so-called 'human rights' approach, with the 1993 UN Vienna Declaration on Human Rights being the first official instance to explicitly link poverty and the enjoyment of human rights (Lister, 2004).[5]

On the conceptual front, the first decade of the new millennium is said to having "carried on along the same lines as in the 1990s" (Misturelli & Heffernan, 2010, p.47). The rights-based discourse became more widespread, but at the cost of specificity of the concept, to the extent of

[5] Article 14 of the Declaration reads: "The existence of widespread extreme poverty inhibits the full and effective enjoyment of human rights; its immediate alleviation and eventual elimination must remain a high priority for the international community." (Vienna Declaration 1993)

it "[having] been somewhat neutralised within the definitions [of poverty]" (p.48). This somehow illustrates, on a smaller scale, what has happened to the very concept of poverty: through the expansion of its conceptual space, the term has lost its power to represent a specific, unanimously accepted condition, and to elicit a common representation among different individuals. If, in the case of poverty, this has had the beneficial consequence of improving the understanding and enriching the conceptualisation of what it means to be poor, in the case of the human-rights approach the consequence has been the weakening of the normative notion of human rights as inalienable, thereby depriving the approach of much of its power and uniqueness.

2.3 Six Approaches to the Concept of Poverty

There are today so many different ways of looking at the concept of poverty that anyone proposing a definition probably finds her- or himself cornered in a conceptual space bound by more or less predetermined parameters relative to the different dimensions used to characterise poverty according to each of the approaches to this concept. This observation might be illustrated by dissecting the apparently simple and straightforward definition proposed by Edward O'Boyle (1999, p.282): "Poverty is a problem in unmet human physical need." A few paragraphs later, O'Boyle himself uses the same "undisputed" definition in a slightly modified form, replacing 'physical' with 'material' (p.283). The consequences of this addition are not to be overlooked. The word 'problem' suggests that something that should occur has not occurred, in this case the 'meeting of need'. Two more common formulations found in the literature are 'inability' and 'incapacity', both eliciting the idea of hurdles in the way to meeting that need. 'Problem' is intentionally vague, in particular in respect of the subject: is it endogenous or exogenous to the poor? Then there is the key notion of 'unmet', suggesting the existence of a boundary value of fulfilment below which the chosen dimension – in this case human physical and material need – is deemed insufficiently satisfied. O'Boyle chooses 'physical' and 'material' human need as the two key dimensions upon which poverty is to be assessed. This immediately connotes his definition with the monetary-subsistence, alternatively the basic needs tradition, although the enthusiasm for relative measures expressed in his paper brings him closer to the social exclusion field where socio-cultural contextualisation is key. Finally, the word 'need' indicates that poverty is a matter of necessities and not just wishes of people. But where is the line drawn between the two, given that wishes so greatly influence needs (Scott, 1981;

Townsend, 2010 [1962])? An who is to make such a judgement: experts or the poor themselves (Chambers, 2006; Ruggeri-Laderchi *et al.*, 2003)?

The second part of the quote from Edward O'Boyle that opens this chapter – the conformity of the concept of poverty with the values and premises of a given generation – raises two important issues. One is the relativity of poverty. The other is something that O'Boyle himself draws attention to, namely the imperative of anchoring the concept of poverty in a broader concept of what human life is and should be. Although recognising that "one's answer [to the question of what is means to be poor] is a reflection of a personal value system" (O'Boyle, 1999, p.281), he argues that these answers often lack "explicit recognition of the premises [...] regarding human nature, how economic affairs are organised differently by competition and cooperation, how each of these two activating principles relate to different human dispositions and depend on affirming different social values, and how all of these differences determine the way in which they define and measure poverty" (p.290). Of the six different approaches to poverty explored in this section, only one is explicitly based on a comprehensive conceptual framework of human well-being, namely the capability approach pioneered by Amartya Sen (but see Gasper, 2002). All others, in spite of resulting from preoccupations with human well-being, are concerned not so much with the fullness of that well-being, but only with the acceptable minimum of it. Instead of arguing for what human life should be, they argue for what it should not be, or at best for what it should not be without.

A cornerstone of the concept of poverty is what Rosenfield (2010) termed its 'threshold effect'. Beyond the debates on absolute and relative measures of poverty, and common to all of the different approaches to this concept, being poor necessarily implies that someone has crossed some minimum acceptable level in respect of the dimension(s) that characterise poverty (Capucha, 2005). The presence of this threshold, it has been argued, is actually one of the key aspects distinguishing poverty from inequality (Sen, 1983; see also Rector *et al.*, 1999). Indeed, having less than others does not *per se* qualify one as poor; for this to happen a person has to find her- or himself below the mentioned threshold, such that well-being and, in extreme cases, survival is compromised.

If the 'threshold effect' of poverty is an unanimously accepted fundamental, the same cannot be said of the way in which this threshold is defined. Here two main currents of thought collide: the absolute and the relative ones. This divide remains one of the 'fault lines' in the debate on

poverty (Maxwell, 1999a), having sparked debates between scholars of either current.[6] The absolutist school was inaugurated – presumably inadvertently – by Rowntree when he first derived a poverty line based on a set of presumed minimum subsistence requirements (Scott, 1981).[7] Despite all conceptual and methodological hardships it has faced, "the basic approach to measuring poverty used by [Rowntree] 100 years ago is still very much a feature of how we measure poverty today" (Kanbur & Squire, 1999, p.29). This fact is confirmed by the widespread use and acceptance of the 'one dollar a day' measure as the international poverty metric. Fundamentally, what the absolutist view holds is that it is possible to establish a poverty threshold which, in its ideal form, is applicable to all people in all situations. Hence the dominance of physiological criteria for assessing poverty, as it is in this realm that minimum standard requirements should be easiest to establish objectively across different societies. They key drawback with the absolutist view is that such standards are defined by the society one finds her- or himself in, and thus cannot be applied universally (Townsend, 2010 [1962]; Rosenfield, 2010; Brady, 2003; O'Boyle, 1999; Sen, 1983). Even physiological requirements can and do vary widely, and are thus inadequate for comparisons of absolute deprivation between different individuals.[8] O'Boyle (1999) adds another critique of absolute poverty measures, namely that most of these are based on assessments of material assets purchased in a real or idealised market. By stating that absolute standards measure poverty "*relative* to the income required to purchase the goods and services to maintain a minimal standard of living" (p.1; italics in original), the author highlights the fact that this minimal standard of living – itself a socially and culturally defined concept – is further mediated by a process – the purchase of goods and services, for which income is a proxy – which itself is specific to each society. The supposedly absolute standard is based on a relative measure.

Dissatisfaction with the shortcomings of absolute poverty thresholds has led to proposals for their replacement with relative measures. This approach explicitly recognises the relativity in establishing standards of well-being, arguing that these are determined by society. This position can be summarised by a statement by Peter Townsend referring to physiological requirements (2010 [1962], p.94): "[T]here is no list of the absolute necessities of life to maintain even

[6] Two examples include Sen (1983), Townsend (1985) and Sen (1985); and O'Boyle (1999) and Rector *et al.* (1999).

[7] Scott mentions the works of Le Play (1835) and Booth (1889-91), both of which precede Rowntree's York study (1901) as also contributing to the conceptual basis for the absolute standard of poverty. Rowntree, however, it has been acknowledged (Maxwell, 1999a), was the first to develop and apply a poverty line in his investigations.

[8] See Townsend (2010 [1962]) and Rein (1970) for critiques of the use of nutritional requirements for defining poverty lines.

physical efficiency or health which applies at any time and in any society, without reference to the structure, organisation, physical environment and available resources of that society." Citing Alfred Marshall, the same author draws attention to the fact that concerns with the relativity of poverty had been raised as early as 1890 (see also Townsend, 2006). However, it is presumably the fact that absolute standards more closely represent poverty's 'threshold effect' that has caused the absolutist view to gain such dominance over the relativist one for so long. At present, though, the latter appears to have gained the upper hand in most conceptual formulations, under the generic acknowledgement that "what passes as absolute norm tends in practice to be relative, in the sense that poverty lines in [any two countries], though both intended to be absolute, are closely related to local culture and to local national incomes" (Wolf, 1981, p.25).

Sen suggests a mixed arrangement of relative and absolute measures within the frame of the capability approach: "*absolute* deprivation in terms of a person's *capabilities* relates to *relative* deprivation in terms of commodities, incomes and resources" (1983, p.153; italics in original). What Sen emphasises is the absolute achievement in the capability space, that is the fact that a person absolutely can or cannot satisfy a given need. The binary nature of this achievement – 'absolutely' yes or no – is what Sen calls the "irreducible absolutist core in the idea of poverty" (1983, p.159). But the ability to satisfy that given need depends on the access to and command over resources that relate to the characteristics of the person and of the respective environment. Hence the claim for relativity in the space of resources. As with many of Sen's intricate conceptualisations, his views might be better explained by way of an example borrowed by Sen from Adam Smith.

> "The temptation to think of poverty as being altogether relative arises partly from the fact that the absolute satisfaction of some of the needs might depend on a person's relative position vis-a-vis others [...]. The point was very well caught by Adam Smith when he was discussing the concept of necessaries in The Wealth of Nations: *'By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but what ever the custom of the country renders it indecent for creditable people, even the lowest order, to be without. . . . Custom . . . has rendered leather shoes a necessary of life in England. The poorest creditable person of either sex would be ashamed to appear in public without them.'* In this view, to be able to avoid shame, an eighteenth century

Englishman has to have leather shoes. It may be true that this situation has come to pass precisely because the typical members of that community happen to possess leather shoes, but the person in question needs leather shoes not so much to be *less ashamed* than others—that relative question is not even posed by Adam Smith—but simply not to be ashamed, which as an achievement is an absolute one." (Sen, 1983, p.159; italics in original).

"In the commodity space, therefore, escape from poverty in the form of avoiding shame requires a varying collection of commodities—and it is this collection and the resources needed for it that happen to be relative *vis-a-vis* the situations of others. But on the space of the capabilities themselves—the direct constituent of the standard of living—escape from poverty has an absolute requirement, to wit, avoidance of this type of shame. Not so much having equal shame as others, but just not being ashamed, absolutely." (p.161)

Before advancing to the overview of the main approaches to the meaning of poverty, it is worth alluding to a few generic issues about how poverty is defined and measured.[9] The first such issue is that of space, or the domains in which poverty is to be assessed. Is poverty an issue of insufficient income, or of unrealised capabilities? Space is the principal aspect distinguishing the various approaches discussed below. The second is universality, in the sense of the transferability of definitions and measurements of poverty between different societies. As was discussed above, this questions is central to the absolutists-relativist dichotomy. Thirdly, there is the issues of who assesses and measures poverty. Should it be done from inside or from outside poverty, that is, by the poor or the non-poor? While most poverty analyses are conducted by the latter, views are held that it is the poor who are actually in a better position to qualify their poverty (Akindola, 2009; see also Chambers, 2006). Then there is the question of defining the poverty line, concerning not only the conceptual basis of the line itself – Sumner's 'threshold effect' – but also the relative vs. absolute approach to its definition. The fifth issues is primarily a methodological one, having to do with the unit over which poverty is defined, whether it is the individual or the household, and at higher levels of aggregation, different geographical units. The importance of this issue is that, by changing units of analysis, one conceals or reveals details of poverty that may be relevant from an analytical or a political point of view. The sixth issue, also mainly methodological, is of how to deal with

[9] The ensuing text is based on a discussion of these issues by Ruggeri-Laderchi *et al.*, 2003.

multidimensionality. This is a particularly pertinent matter given the prominence that multi-dimensional aspects of poverty have acquired in the past two decades (see Thorbecke, 2005). A further issue is that of the time horizon over which poverty is to be analysed. The dynamic nature of many poverty situations makes the choice of time horizon an important issue for poverty measurement (Townsend, 2010 [1962]). Finally, Ruggeri-Laderchi and colleagues (2003) raise the question of whether or not the definition of poverty, other than proposing a meaning for the concept, also should provide a causal explanation of the phenomenon and suggest avenues for its alleviation.

2.3.1 The Monetary-Subsistence Approach

It was mentioned earlier that, among the initial set of studies on poverty carried out in the late 19th and early 20th century, Rowntrees's *Poverty: a study of town life* published in 1901 was the first to apply a poverty line to distinguish the poor from the non-poor. This poverty line corresponded to the calculated minimum monetary expenditure necessary for maintaining merely physical health. Essentials included food, clothing, rent, fuel and household sundries (Scott, 1981). Because income was easier to measure than actual expenditure, it was used as a proxy for the latter. The position of a household's average income relative to the threshold so defined by Rowntree classified it as poor or non-poor.

The process for defining poverty according to this approach is conceptually very simple. First one established a pool of essential goods and services, and defines the minimum acceptable levels in respect of each of these per individual or per household. Then one estimates the price for acquiring those goods and services and computes the aggregated minimum necessary expenditure. Finally one compares each household's income with this minimum expenditure and assesses whether it allows the people in the household to satisfy the identified minimum necessities.

There are a number of contentious aspects with this approach. The first is the assumption that poverty – or, conversely, welfare – is primarily a matter of physical well-being represented by the mere satisfaction of a relatively limited set of minimum necessities. As was discussed in the previous section, this view has progressively been abandoned in favour of an idea of multidimensional poverty, of which non-material resources are an important component. Then there is the difficulty, if not impossibility, of establishing with rigour the minimum necessary levels of each essential. The traditional methodological shortcut has been to calculate the cost

of satisfying food requirements and then estimate non-food expenditures. The use of nutritional requirements has been repeatedly criticised (Townsend, 2010 [1962]; O'Boyle, 1999; Rein, 1970), its most obvious limitation being that they vary widely between individuals, as do the respective rates of conversion of food intake to energy. Nonetheless, a value of around 2,100 kcal per adult and day is still in use today in many countries as the basis for calculating the national poverty line (Scott, 1981). A further critique has been pointed at how the minimum (nutritional) requirement is defined, namely at the arbitrariness in the choice of food products that should count as essential (Scott, 1981). The issue is largely one of who should be entitled to do that choice. As Rowntree (1901) and Orwell (1954) acknowledged (cited in Scott, 1981), the actual choices of the poor can hardly be seen to conform with the predicaments of 'experts'; "it is clear that many people, in spite of adequate incomes to buy the products that would keep them well nourished and healthy, do in fact spend their money on other things and suffer" (Streeten, 1984, p.973).

The basket of essentials having been established, the next step is to calculate its cost. This usually involves assumptions of average prices for a range of products deemed to cover the identified essentials. Again, a number of problems emerge, namely that products may not be available in exactly the same form and at the same price everywhere. Then there is the issue of goods and services for which there is no market price, so-called externalities (i.e. external to the market). It is well-known that in many rural communities much of consumed food is not traded on the market. Public services for which no price is charged are another type of externalities. Often these and other methodological hurdles can be dealt with by a variety of more or less sophisticated techniques, "but only at a cost – [usually that of representativeness and applicability] – and only with appropriate data" (Kanbur & Squire, 1999, p.4), which seldom is available in the ideal form. In those cases where nutritional requirements form the basis for estimating the poverty line, the calculation of the cost of the food basket is followed by the estimation of the so-called Engels coefficient, a value representing the fraction of food expenditures in relation to total household expenditures. The critique of arbitrariness in the estimation of minimum food requirements extends to the estimation of this coefficient (Rein, 1970).

Despite its weaknesses, the monetary-subsistence approach still retains a strong presence in today's poverty discourses. This derives presumably from the fact that the idea of subsistence so well mirrors the notion of fundamental human need and thus provides a suitable

representation of poverty. Moreover, in most societies – especially in wealthier ones, where most conceptualisations of poverty have been developed – money is the means of acquiring most goods and services that, besides enabling subsistence, allow people to realise many of their goals in life.

2.3.2 The Basic Needs Approach

The roots of the basic needs approach have been traced back to the early 1970s and the work of the International Labour Organisation (ILO) (Streeten & Burki, 1978; Jolly, 2010). The involvement of this organ of the UN was meant to bring issues of employment and equality of income distribution and wealth to the fore of development policies. This came as a reaction to growing evidence at the time that the exclusive focus on economic growth in earlier decades had contributed little to reducing the extent and severity of poverty worldwide. Those two concerns – unemployment and inequality – were key factors preventing the poor from benefiting from enhanced growth: job opportunities in the industry were limited for the poor, forcing many to accept poorly productive and badly remunerated work in the informal economy, often against their will; and ownership of resources and assets in rural areas was eschewed in detriment of the poor (Streeten & Burki, 1978), preventing them from increasing production and accumulating capital, and locking them in poverty. The ILO's missions to different poor countries in the early 1970s resulted in the elaboration of a development strategy for the 1976 World Employment Conference stipulating that by the end of the 20th century the poorest population group in each country should achieve the satisfaction of a set of basic needs (Jolly, 2010). These were of two basic types: minimum requirements of individual households in terms of private consumption of items such as food, shelter and clothing; and a pool of publicly provided goods and services comprising water and sanitation, public transport, health and education.

The framework of the basic needs approach has remained largely unaltered since the ILO's initial formulation. This results, presumably, from the fact that the approach itself had a relatively short life in the circles and discourse of international development. Indeed, despite its enthusiastic and relatively quick adoption by the UN system and the community of international donors in the late 1970s, the rise of neo-liberalism, accompanied by structural adjustment programmes and the so-called 'Washington consensus[10] in the 1980s led to the basic

[10] For a summary overview of the Washington consensus by its 'father', see Williamson (2002; 2004).

needs approach being "dramatically sidelined", having since disappeared from the international development discourse (Jolly, 2010, p.13). Hence by the time Paul Streeten (1984) rose a series of 'unsettled questions' in regards to the approach, there was little interest in actually settling them. Shortly after, some of the key advocates of the basic needs approach – among which Streeten – were to engage in the elaboration of the much more successful 'human development approach' inspired by Amartya Sen's thinking on capabilities, which was to become the dominant paradigm for the conceptualisation and measurement of multidimensional poverty (Jolly, 2010).

In an early scholarly writing on the basic needs approach, Streeten and Burki (1978, p.412) argue that the purpose of development is to "raise the sustainable level of living of the masses of poor people as rapidly as is feasible and to provide all human beings with the opportunity to develop their full potential", which implies "meeting the basic human needs of the poorest people in the world". To do so, basic needs strategies should be devised in order to "increase and redistribute production so as to eradicate deprivation" (p.413). The lack of basic goods and services is pointed out as the reason for this deprivation. The key assumption of the approach is then that by providing poor people with a bundle of basic goods and services, they will be able to overcome their poverty. In theory, the concept goes beyond the mere provision of goods and services. Indeed, the quoted objective proclaimed by Streeten states that human development is about 'providing opportunities', a notion also used in the capability approach (Jolly, 2010). The question remained an unsettled one, with Streeten discussing in 1984 whether basic needs referred to "the conditions for a full, long and healthy life, or to a specified bundle of goods and services [...] deemed to provide the opportunity for these conditions" (1984, p.974).

In relation to the prevailing development paradigm at the time of its appearance, the basic needs approach succeeded in drawing attention to non-monetary aspects of well-being, and in particular to the need for poverty reduction strategies to focus on aspects other than income. Despite this important conceptual shift, the operationalisation of the approach was more often than not discussed in terms of the income – public and private – necessary for satisfying the identified basic needs.

A universal bundle of basic needs has never been proposed, although nutrition, education, health, shelter and water and sanitation have been referred to as 'core basic needs' (Streeten, 1984). The approach is purposely relativist in this regard, acknowledging the fact that human needs are subject to geographic, cultural and temporal variations. Each society is thus

responsible for coming up with its own basket of basic goods and services (Streeten & Burki, 1978). The ILO, however, argued in 1976 for the setting of common minimum targets for the entire international community in respect of consumption and access to social services (Jolly, 2010). Such targets have never been operationalised in any meaningful way.

As with all other approaches other than participatory ones the question arose as to who in society should bear responsibility for defining the basket of basic needs. The question has important practical implications. One option is for 'experts' to define allegedly 'objective' minimum standards in respect of 'objectively' selected human needs (Streeten, 1984). Despite the many arbitrarinesses in such a process, it is the one behind most large scale public interventions designed to provide public goods and services. The alternative route is to satisfy "consumers' wants as perceived by the consumers themselves" (Streeten, 1984, p.974). Each (poor) person is hereby expected to subjectively assess the respective needs. External interventions – e.g. government poverty reduction strategies – should then concentrate on simply enabling people to earn an income that in turn allows them the freedom to satisfy their needs.

Another point of contention in the approach was whether the satisfaction of basic needs should be valued as an end in itself or instead as a means for other attainments, notably those related to human capital. Both the ILO (1976, cited in Jolly, 2010) and Streeten & Burki (1978) held that both arguments were valid, the former arguing that basic needs should be regarded in the broader context of basic human rights, while the latter considered that the approach was twice blessed for that precise reason. Interestingly, by 1984, Streeten considered the matter 'unsettled'. While this author clung to the notion of 'double blessing' of the basic needs approach, emerging conflicts between a 'pure basic needs approach' and 'productivity & growth'-centred approaches - in part fuelled by the lack of evidence of causal relationships between the promotion of human capital and economic growth - undermined a wider consensus around that notion. To a certain extent this dictated the demise of the basic needs approach and its progressive replacement with a new paradigm based on the capability approach.

2.3.3 The Capability Approach

The capability approach was initially conceived by the Indian scholar Amartya Sen in the late 1970s and early 1980s, having since been elaborated further and applied by numerous other authors. Unlike the other approaches discussed here, its aim is not merely to provide an

explanation or definition of poverty. Instead, it is a framework of though relative to matters of human well-being and to normative issues in (socio-economic) policy-making (Robeyns, 2005b). Sen himself frames the approach in the following manner (1993, p.30): "The capability approach to a person's advantage is concerned with evaluating it in terms of his or her actual ability to achieve various valuable functionings as part of living." In Sen's terminology, 'functionings' are "parts of the state of a person" (1993, p.31), the different things that one manages to be or do as part of life. Elementary functionings are, for example, being well nourished and enjoying good health. Others, more intimately related to the socio-cultural context, may include achieving self-respect or being socially integrated. Whichever the particular set of functionings chosen, a fundamental criterion for their consideration in normative assessments is that they are valued by the individual. Hence a set of functionings is only as good as the value that the individual attaches to it.

The central concept of the approach, 'capability' reflects the choice by a person of the alternative functionings at his or her disposal. In the words of Sabina Alkire, capabilities constitute "a kind of opportunity freedom", describing the "real opportunities open to a person" (Alkire, 2005, p.2). In respect of the relationship between the two concepts, whereas functionings refer to a person's actual deeds or states of being, capabilities refer to the possibility – or, alternatively, the freedom – of realising them.

According to the capability approach, a person's well-being "is seen as the freedom of individuals to live lives that are valued, i.e. the realisation of human potential" (Ruggeri-Laderchi *et al.*, 2003, p.14). The space for evaluating well-being is thus that of that freedom or, alternatively, of the achievement of the valued functionings (Sen, 1983). Whichever the case, there is an explicit focus on outcomes instead of on means, as was the case in the monetary-subsistence approach. To Sen commodities have a merely instrumental role in enabling the realisation of capabilities and in the achievement of freedoms (1983, p.160; italics in original):

> "Take a bicycle. It is, of course, a commodity. It has several characteristics, and let us concentrate on one particular characteristic, *viz.*, transportation. Having a bike gives a person the ability to move about in a certain way that he may not be able to do without the bike. So the transportation *characteristic* of the bike gives the person the *capability* of moving in a certain way. That capability may give the person utility or happiness if he seeks such movement or finds it pleasurable. So there is, as it were, a *sequence* from a commodity (in this case a bike), to

characteristics (in this case, transportation), to capability to function (in this case, the ability to move), to utility (in this case, pleasure from moving)."

This sequence is depicted in the diagram in Figure 1.

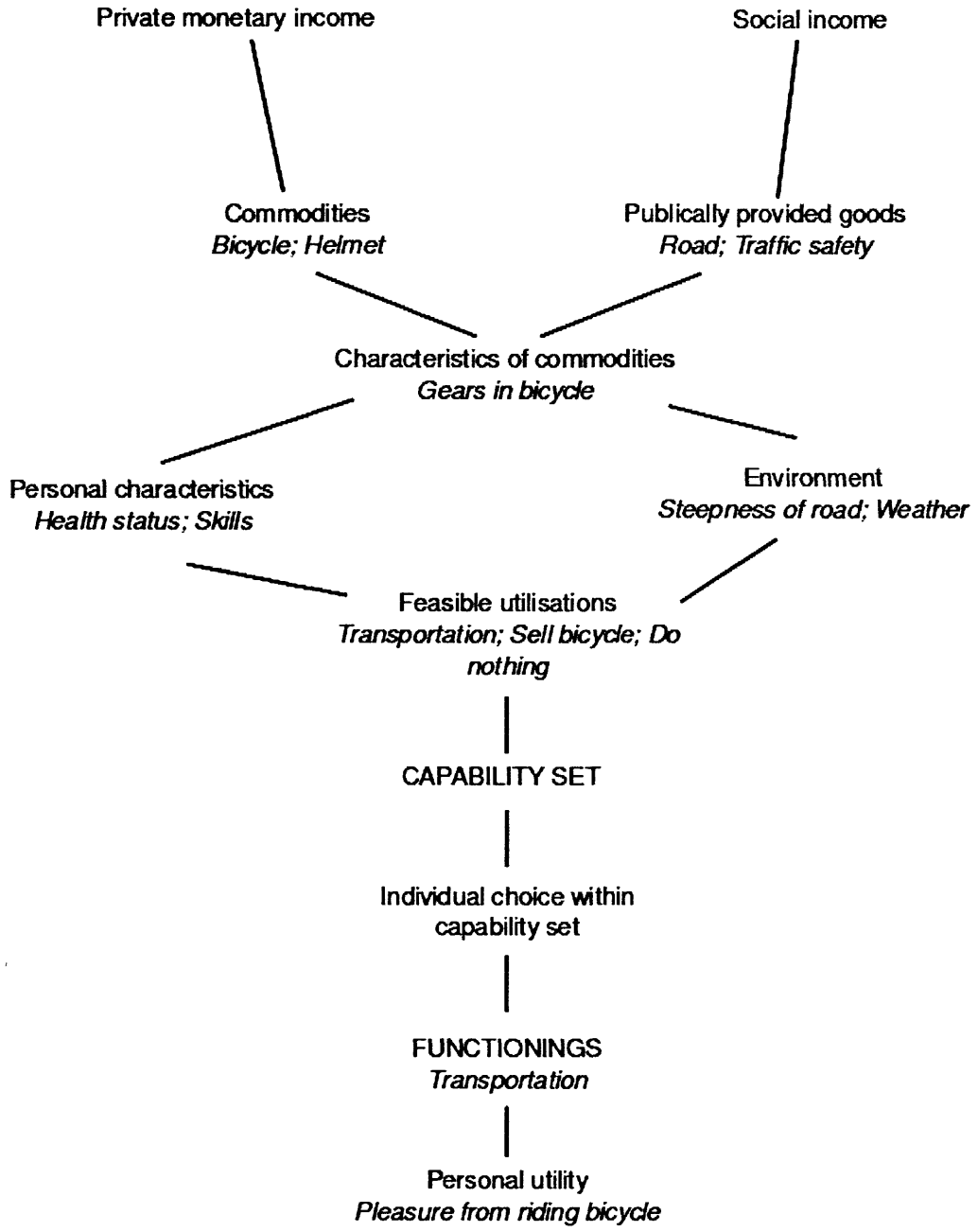

Figure 1 - The capability approach: sequence from commodities to capabilities and utility
(Adapted from Ruggeri-Laderchi *et al.* [2003] and Sen [1983])

Sen also uses this illustration to reject two types of assessments of well-being, namely those based on (control over) commodities and those focusing on individual utility. In regards to the former, he notes that ownership of the bicycle alone does not provide any information about what the person can do, or actually does with it. Should the person be handicapped or simply lack bicycle riding skills; or should there be no roads or road traffic be too dangerous, then a bicycle would not contribute much to that person's well-being. Conceptually, the conversion of commodities – including or represented by income – to capabilities and well-being varies widely between individuals and societies (Sen, 1993). Utilitarian measures, on the other hand, focusing on the mental reaction to the use of the bicycle – feelings of happiness and pleasure – are too dependent on the disposition of the person, and thus provide no good measure of well-being, l*et al*one standard of living. They are too easily influenced by factors that have nothing to do with these two aspects. "A grumbling rich man may well be less happy than a contented peasant, but he does have a higher standard of living than that peasant", Sen argues (1983, p.160). Summing up his position on the relationship between commodities and utility, and capabilities and well-being, Sen maintains (p.160):

> "So the constituent part of the standard of living is not the good, nor its characteristics, but the ability to do various things by using that good or those characteristics, and it is that ability rather than the mental reaction to that ability in the form of happiness that, in this view, reflects the standard of living."

Recalling that a person's well-being should be assessed in the space of capabilities; that relevant capabilities are of many different kinds; and that their realisation is bound by characteristics of the individual, society and the environment, poverty analysis within the framework of the capability approach is a question of society establishing threshold levels of minimum essential capabilities to which it attaches value. Those individuals failing to reach these levels would be classified as poor (Sen, 1983, 1993). As discussed above, they would be 'absolutely' poor in relation to capability thresholds that are relative to a given society. These two relative elements – selection of essential capabilities and definition of thresholds – have remained "radically underspecified" in Sen's conceptualisation (Robeyns, 2006, p.353; see also Clark, 2005), something that has posed some of the greatest difficulties in operationalising the capability approach and in using it in large-scale poverty assessments. Martha Nussbaum is one of the few authors ever to present a list of 'central human capabilities', comprising i) life: normal length of life; ii) bodily health: good health, adequate nutrition and shelter; iii) bodily

integrity: movement, choice in reproduction; iv) senses, imagination and thought, informed by education; v) emotions: attachments; vi) practical reason: critical reflection and planning life; vii) affiliation: social interaction, protection against discrimination; viii) other species: respect for and living with other species; ix) play; and x) political and material control over one's environment (Nussbaum, 2000, cited in Ruggeri-Laderchi *et al.*, 2003 and Clark, 2005). This list has, however, been severely criticised on accounts of its socio-cultural specificity (Ruggeri-Laderchi *et al.*, 2003; Clark, 2005), its ambiguity and vagueness (Robeyns, 2005a), its lack of applicability (Clark, 2005), as well as of methodological issues in its elaboration (Clark, 2005; Robeyns, 2005a). The growing literature on practical application of the capability approach to the measurement of quality of life and poverty appears to be unanimous about the need to establish lists of essential capabilities that are specific to each society (see Robeyns, 2006; for examples see Anand & van Hees, 2006; Burchardt & Vizard, 2007). However, as was alluded to earlier, only very recently has it been attempted to measure capabilities empirically. In regards to the difficulties of this measurement, Ysander (1993, p.84) has argued that most investigations tend to focus on "particular individual achievements, from which [investigators] could try to construct or estimate capabilities". This might be justifiable by the 'elusive' nature of capabilities, which makes it particularly difficult to measure "the counter-factual part which has to do with what a person might be or do – or might have been or have done" (Ysander, 1983, p.84). The undesirable consequence is that by evaluating functionings instead of capabilities, assessments drop the key distinguishing feature of the capability approach, rendering it "virtually identical with the basic needs approach to the measurement of poverty" (Ruggeri-Laderchi *et al.*, 2003, p.18).

2.3.4 The Human Rights-Based Approach

The 1993 Vienna Declaration on Human Rights was, as briefly discussed above, the first official instance establishing an explicit linkage between poverty and human rights (Lister, 2004). Prior to that, the ILO's 1976 basic needs strategy for the World Employment Conference had argued that the satisfaction of basic needs should be situated in a broader context of basic human rights (Jolly, 2010); and ten years later the UN had produced its Declaration on the Right to Development, articulating human development as a fundamental human right (UNDP, 2003).

What sets the rights-based approach apart from other conceptual approaches to human development and poverty is that it explicitly defines the fulfilment of human rights as a fundamental dimension of well-being and a central objective of interventions targeting development and poverty reduction. In this context, the satisfaction of basic human rights is understood both as an end it itself, and as a means for attaining other development objectives (Maxwell, 1999b). The former statement is justified by the fact that upheld human rights constitute internationally recognised 'goods' for every individual, and, perhaps more importantly, by the fact that rights are the pillars of dignity and worth of human persons (OHCHR, 2004).

The key distinguishing feature, and arguably its principal strength in relation to other approaches, is its explicit legal fundamentation, something that renders the fulfilment of rights a legal and not only a moral obligation: "A right can be enforced and entails an obligation on the part of the government. A need, on the other hand, is an aspiration that can be quite legitimate, but it is not necessarily associated with an obligation on the part of the government to cater to it. The satisfaction of a need cannot be enforced " (UNDP, 2003, p.1). There is thus clearly the dimension of obligations on states in regards to human rights, to wit obligations to i) respect, requiring states to refrain from interfering with the enjoyment of rights; ii) protect, requiring states to prevent violations of the rights of individuals by third parties; and iii) fulfil, requiring states to implement measures toward full realisation of human rights (UNDP, 2003).

As mentioned, the approach is founded on international treaties specifying both the fundamental human rights and the obligations of states in regards to their fulfilment. These treaties include several of the UN's key declarations and conventions, namely the Universal Declaration of Human Rights; the two International Covenants on Civil and Political Rights, and on Economic, Social and Cultural Rights; the International Convention on the Elimination of All Forms of Racial Discrimination; the Convention on the Elimination of All Forms of Discrimination against Women; the Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; and the Convention on the Rights of the Child (UNDP, 2003), to which the ILO Conventions should be added, as they provide for the promotion of core labour standards (Maxwell, 1999b). Many of these legal instruments have received widespread official endorsement by the world's countries, conferring to the set of agreed human rights a degree of universality not enjoyed by any of the poverty dimensions advocated by the remaining approaches to poverty (see OHCHR, 2004).

The heavy international legal architecture should not obfuscate the need to consider local specificities, in particular when the approach is used for dealing with poverty, itself a phenomenon largely shaped by conditions at local level. In regards to this notion, the UN Office of the High Commissioner for Human Rights (OHCHR) maintains that "international human rights law provides a framework within which detailed national and community-level [poverty reduction strategies] can be constructed", ensuring that "essential elements of [poverty reduction strategies], such as accountability, equality and non-discrimination, participation and empowerment, receive the sustained attention they deserve " (2004, p.3). Key in this line of thought is participation by the poor in decision-making at national and local levels, itself a human right, as well as one of its principles. By attaching importance to participation as a right in itself, the approach is concerned not only with the outcomes of poverty reduction interventions, but also with the processes of elaborating and implementing these (UNDP, 2003). Conceptually, however, the proposed relativism appears to be somewhat at odds with the principle of universality of human rights.

For the purpose of dealing with poverty, it is important to establish how one goes over from human rights to poverty, and to know what is the relevance of the rights-based approach to the conceptualisation of this latter phenomenon. It was suggested earlier that the fulfilment of basic rights is important not only for the recognition of a person's value and dignity, but also as a means of achieving other human development goals. In regards to the former argument, Sen's thinking on capabilities has been said to provide the conceptual bridge between poverty and human rights through dignity and freedom (OHCHR, 2004).[11] Recalling that in the capability approach poverty is defined in the space of capabilities, a person is then considered poor if she or he is unable to realise certain basic freedoms. Although a consensual set of basic freedoms has never been produced, it is argued that being able to realise these is "fundamentally valuable for minimal human dignity" (OHCHR, 2004, p.9). Human rights being concerned primarily with human dignity, by implication they are concerned with the fulfilment of those basic freedoms or, in Sen's terminology, with the achievement of the basic capabilities. The importance that these basic freedoms have for human dignity thus provides the link between poverty – seen from the perspective of basic capabilities – and human rights.

The latter argument – promotion of human rights as a means for advancing development in other domains – is primarily a practical issue. It results from the observation that poverty

[11] Sen himself was actively involved in the production of the 2000 Human Development Report, dedicated to the theme of human rights in development.

reduction objectives - for example enhancement of agricultural productivity, or expansion of employment opportunities for the poor – are often constrained by problems in upholding people's rights – for example imbalances in access to resources, or discrimination in the labour market. The reverse argument is often also true, the condition of being poor impairing the fulfilment of basic human rights – for example, lack of means of transportation to take children to school, thereby depriving them of their right to education. In regards to these linkages, the rights-based approach expands the understanding of causes and consequences of poverty, primarily by analysing and linking poverty to the "normative framework that seeks to guarantee results and accountability for effort in the process of poverty reduction" (UNDP, 2003, p.6). A statement from the 2000 HDR on the relationship between human development and human rights may serve, *mutatis mutandis*, to summarise those two arguments: "[H]uman rights and human development are close enough in motivation and concern to be congruous and compatible, and they are different enough in strategy and design to supplement each other fruitfully" (UNDP, 2000, cited in OHCHR, 2004, p.13).

There are different ways in which a rights-based approach operates for the purpose of dealing with poverty (see UNDP, 2003; OHCHR, 2004). Underlying the whole concept is the notion of entitlement of individuals – specifically the poor – something that results from legal obligations imposed on others. Provided these obligations are complied to and rights are upheld, individuals in general and the poor in particular are empowered. The particularity of these obligations lies in the fact that they are contained in internationally negotiated legal instruments to which sovereign states are bound, as mentioned earlier. Upon ratification individual states are thus formally obliged to implement the agreements within their territories and in respect of their nationals. With the progressive establishment of judicial instances to try international human rights cases, the 'toothless enforcement' of the past (Maxwell, 1999b) is being replaced by a potentially effective one. This in turn promotes accountability, or at least the demand for it. What is more, this is no longer the vague accountability of the average political action, but one that is founded on an explicit and internationally recognised framework. Adding to this sequence of legal obligations, entitlement of individuals and empowerment of the poor, there are a number of specific domains of human rights that are relevant for dealing with poverty. These are:

- non-discrimination and equality, having to do with the differential enjoyment of freedoms by different groups in society, both as a cause – e.g. women being denied access to certain

employment opportunities – and a consequence of poverty – e.g. being discriminated for being poor;

- participation, the right to take part in the conduct of public affairs being recognised in several international instruments (OHCHR, 2004). It involves the possibility of the poor to be involved in decision-making processes affecting their lives, in particular the elaboration of poverty reduction strategies. The right of association is equally relevant for the poor to make themselves heard at higher decision-making levels;
- economic, social and cultural rights, duly recognised in the respective Covenant, comprising, *inter alia*, the rights to work, adequate standard of living, housing, food, health and education;
- access to information, with particular emphasis on information pertaining to activities affecting the lives of the poor; and
- equity and the rule of law, notably ensuring equitable access to police and the judiciary to all citizens, in particular the poor and victims of discrimination.

It is worth discussing some of the fault lines in the conceptualisation and operationalisation of the human rights-based approach, according to Simon Maxwell (1999b). The first is the hierarchy of rights. In spite of 'indivisibility' being a fundamental principle of human rights (UNDP, 2003; OHCHR, 2004), in face of the difficulty of upholding all rights equally and simultaneously, it has been discussed whether or not certain rights should be given primacy. In solving complex social issues touching on multiple right, this issue may be an important one for the design and implementation of interventions. The issue may, however, be one of entry points and sequencing of rights rather than one of their hierarchy (see OHCHR, 2004).

A derived issue is that of so-called 'progressive realisation', that is, the notion that fulfilling all rights for everyone is resource-intensive and is thus often beyond the capacity of individual states, in particular poorer ones. Again, this calls for the establishment of some form of hierarchy of rights and for their differential implementation in time and space, something that raises issues of indivisibility of rights and of equitable treatment of all individuals. Debates have emerged about whether or not minimum levels of implementation should be required, as well as about the risk of 'progressive realisation' being used to justify lack of effort and

accountability by states. In this regard, the UNDP has stressed the need to "distinguish inability from unwillingness" (2003, p.4).

Then there is the difficulty of balancing individual and collective rights and responsibilities. This originates from the fact that certain individual rights result in costs for others – for example, the right to reproduction requires that child-care facilities be created, which are usually publicly funded. At the level of individual responsibilities, the question posed is to which extent (social) rights should be granted to those (poor) people who engage in conducts that somehow nullify the benefits deriving from those rights. Examples include whether or not heavy smokers should have restricted access to health-care services, or whether poor people with vices of various kinds should be entitled to public financial support (Maxwell, 1999b).

A fourth line of debate concerns the role of non-state actors and the existence of international duties in respect of the fulfilment of human rights. The former issue has to do with the fact that both poverty reduction and the promotion of human rights are often in the hands of entities that are not formally bound by the international agreements pertaining to human rights. Maxwell (1999b) notes that self-regulation appears to be a preferred way among non-governmental organisations. However, this leaves open the question of who effectively is accountable when these organisations act on behalf of states. As for the second issue, the question is whether countries have a duty to work towards the fulfilment of human rights beyond their own borders, and if so, to which extent. In such cases, how then are costs and responsibilities shared between 'donor' and 'recipient' countries?

The fifth debate has to do with the measurement of the degree of realisation of human rights. While it is recognised that measurement is important for the assessment of progress of any programme – and, in the specific case of interventions targeting human rights, as a precondition for accountability (OHCHR, 2004) – performance standards are often difficult to design. Furthermore, designing these standards poses the risk of oversimplifying complex realities. As an example, how does one assess the right 'to take part in the conduct of public affairs' in all of its dimensions?

Finally, there is an issue that speaks to the very core of the rights-based approach, namely that of of legal enforcement as a necessary condition for accountability. As alluded to above, it is the force of the law that constitutes the main strength of this approach. It is equally true, however, that legal enforcement is expensive, cumbersome and often not easily available. In

particular, international courts for human rights issues are relatively recent creations, which in part justifies their very reduced number worldwide. An alternative way might be to foster advocacy for human rights and to link these to poverty reduction processes. Adding to this, follow-up and dissemination of results of human-rights monitoring is a means often used to draw attention not only to the relevance of rights, but especially to the performance of duty-bearers, thereby eliciting accountability.

2.3.5 Participatory Approaches

The use of methods for directly involving poor people in the assessment of their standard of living started to emerge in the late 1970s and early 1980s, initially as means of defining monetary poverty lines that better fitted that standard than externally derived ones (Kanbur & Squire, 1999). These methods evolved to include broader characterisations of the livelihoods of the poor, in earlier days in the form of so-called 'participatory rural appraisals', and subsequently as integral parts of many policy-making processes relative to poverty (Ruggeri-Laderchi *et al.*, 2003).

At first sight, the contribution of participatory approaches to the concept of poverty appears to be strictly methodological. However, allowing people to reflect on and define their poverty actually generates new descriptions of what it means to be poor. This is what Robert Chambers termed the 'multiplicity of the meanings' of poverty given by "the objects of the definition and description" (2006, p.4). Hence participatory approaches do effectively enlarge the conceptual field of poverty. Contrary to the other approaches, they do not propose or focus on one single meaning of the concept, but on the different meanings and interpretations it may have.

In practice, participatory approaches make use of a variety of different methods (see examples in Ruggeri-Laderchi *et al.*, 2003). In common they share a number of limitations. On the conceptual front, allowing people to subjectively assess their own condition might conceal objective insufficiencies in their lives. Recall, from the discussion above, how one's disposition might affect notions of happiness and fulfilment, and thus perceptions of well-being. On a more fundamental level, how one assesses something depends for the most part on what one knows. As such, limited information as well as social conditioning interfere with one's perception of one's own reality (Ruggeri-Laderchi *et al.*, 2003). The undesirable consequence of this is that participatory assessments, besides not being 'objectively' true, might be misleading for the purpose of designing interventions for poverty reduction.

Another limitation is precisely that which participatory approaches are meant to overcome, namely the imposition of definitions and standards by the non-poor. In this regard, not only are the poor usually identified by means of an externally-driven process using standardised measures – for example national or international poverty lines – but, more importantly, "it is nearly always outsiders who conduct the assessment and interpret the results" of the self-assessment made by the poor (Ruggeri-Laderchi *et al.*, 2003, p.25). What is more, discussions of the findings from these assessments are, for the most part, carried out away from the circles of the poor, similar to what happens in the other approaches to poverty.

Two other difficulties have been identified, of a primarily methodological nature. These are i) intra-household and intra-community heterogeneity, raising questions of representativeness of all relevant voices in the assessments; and ii) power relations and other mechanisms of exclusion preventing certain voices from being heard, thereby biasing assessments towards the opinions of dominant community members or groups (Ruggeri-Laderchi *et al.*, 2003). To varying extents these problems can be resolved and should not undermine the conceptual validity and the practical usefulness of participatory approaches. Indeed, these approaches offer interesting prospects for operationalising other approaches that are markedly individualistic and for which it has been difficult to agree on common 'objective' measures for assessing poverty, as in the case of the capability approach (see Robeyns, 2006).

2.3.6 Social Exclusion

Social exclusion has been defined as an "accumulation of confluent processes with successive ruptures that, originating from within the economy, politics and society, remove people, groups, communities and territories from, and render them inferior in relation to centres of power, resources and prevailing values" (Estivill, 2003, p.20). In the review of aspects of social exclusion and of their historical evolution included above, it was alluded to the fact that concerns with forms of deprivation and the consequent marginalisation began to permeate political and academic circles and discourses in the mid 1970s. The original use of the term 'exclusion' in the context of the 'new poverty' that Europe was faced with after the oil shock of the early 1970s – which put a bitter end to the '30 golden years' of post-war prosperity (Capucha, 2005; Estivill, 2003) – has been assigned to the 1974 work *Les exclus: un Français sur dix* by René Lenoir. Here, attention was drawn to the large number of people who were being excluded from the benefits of rapid large-scale socio-economic progress. In Europe, the

concept of 'social exclusion' has dominated over that of poverty when referring to forms of deprivation found in this continent. This has been said to stem first from a certain reluctance by governments of some European countries to use the term poverty to describe their own societies; and second from the fact that the word exclusion suggests that whatever problems a society faces, those are found outside its core, the fundamentally benign nature of which is hereby not harmed (Capucha, 2005; see also Lister, 2004).[12]

The concept of 'social exclusion' is rooted in the notion of relative poverty, assuming as it does that all standards of living are defined by and in relation to the social context in which an individual finds him- or herself. Hence people should be considered poor or non-poor – excluded or included – in relation to that context and in comparison to the respective standards (see Townsend, 2010 [1962]). But the concept of exclusion is more than that, in the sense that it extends beyond the pure relativity of having more or less than others. Importantly, the social exclusion approach to poverty is remarkable in that the definition of the condition of being excluded also include a reflection of the processes through which exclusion is generated (Ruggeri-Laderchi *et al.*, 2003). This aspect is clearly captured in Estivill's definition quoted above. In addition, 'social exclusion' does not concern control over resources alone, as traditional conceptualisations of poverty do.

The 'accumulated confluent processes' leading to social exclusion are as numerous as the socially excluded, very much as those leading to poverty are as numerous as the poor. Amaro and co-authors (2003) point out that those processes combine factors at three distinct levels: macro, referring to generic structural characteristics of development paradigms applied to industrial societies in the past 200 years (e.g. socialism, capitalism); meso, referring to national and local level norms, institutions and structures that mediate the interactions between groups at various levels (including not only between different population groups in one society, but also between different societies in different countries); and micro, having to do with characteristics of the individual and of the respective household (e.g. health, education status). Irrespective of how these factors combine, the critical aspect if that they lead to a dissipation of the bonds that traditionally hold an individual or a group within the society.[13]

[12] Be it as it may, the word 'poverty' continued to be used in the political discourse, the European Commission having launched its first Poverty Programme in 1975, subsequently reviewed and extended up to 1994 (Amaro *et al.*, 2003).

[13] See Capucha (2005) for an extended discussion of how this dissipation has been conceptualised.

In every society there have always existed individuals and groups who intentionally seek to be excluded, to separated themselves – often physically – from that very society. Typical examples include those retreating for spiritual or religious purposes, or self-segregating groups conscious of their separated identity, such as the Romani in various European societies. For normative purposes in trying to resolve social problems, 'social exclusion' has, however, focused only on unintentional exclusion processes and on the respective manifestations. The latter are, again, virtually countless, but a simplified typification has been proposed by Amaro and co-authors (2003). According to them problems of integration at economic, social, cultural, environmental and political levels result from the combination and accumulation of the macro, meso and micro level processes that determine an individual's condition in society. Capucha (2005) stresses the centrality of economic integration, that is, the individual's participation in economic activities through labour (see also Estivill, 2003), referring to the views of other authors who saw in the changes to the productive structure of industrialised societies many of the root causes of social exclusion. Lack of integration in turn manifests itself as disaffiliation with society, that is the non-recognition of one's own place within the latter, often compounded by the rupture of family and social bonds and by non-participation in community life. Fernandes (1995, cited in Capucha, 2005, p.81) proposes that these and other forms of disaffiliation are not merely manifestations of social exclusion, but also direct consequences of larger processes of dissolution of social solidarity and of the respective replacement by individualistic conceptions of the human being that focus on economic productivity. Amaro and co-authors (2003) also mention the erosion of power and influence in society as manifestations of social exclusion, while Estivill (2003) recalls that processes of segregation of specific groups have been and continue to be promoted by ruling elites with the purpose of perpetuating a socio-economic order that sustains their rule. Political exclusion can thus be used as a political weapon, as alluded to above in reference to South African apartheid. Taken together, these different manifestations suggest that the one domain of individual life that is most profoundly affected by processes of social exclusion is that of relationships between the individual and other members of society (see Amaro *et al.*, 2003).

The explicitly relativist nature of the concept of social exclusion demands the existence of a social structure with a degree of internal coherence and homogeneity, which a majority of individuals identify themselves with. In other words, one is excluded in relation to a majority of 'the included'. The characteristics of that social structure are thus critical for the processes of

exclusion: on one hand, the more closed and intolerant a society, the easier it keeps away any new entrants (for example, immigrants) and expels those who do not conform to the dominant patterns and norms (for example, those with a different sexual orientation); on the other, the increasing "multiplicity and heterogeneity of dominant values" of contemporary industrialised societies undermine their internal cohesion and blur the fundamental core to which individuals belong as integral members of society. Feelings of integration in and belonging to society are thence complicated (Estivill, 2003).

In poorer societies, multi-polarity and relative heterogeneity are two important difficulties in applying the concept of 'social exclusion' for the analysis of living conditions (Ruggeri-Laderchi *et al.*, 2003). Other than the difficulty of establishing what the norm is in relation to which assessments are to be made, it is often the case that that norm – that is, normality – in those societies is actually of a standard too low to be objectively desirable. This being the case, assessing a person's condition in relation to a too low norm may not be an adequate account of how decent a standard of living is. For similar reasons, some authors have argued for restricting the use of relative poverty measures to developed societies (Brady, 2003).

The boundary between poverty and social exclusion if often still unclear and subject to some debate, especially if one adopts a broad multidimensional perspective of the former term. The approaches to both concepts are fundamentally concerned with a "set of social disadvantages that some individuals face in relation to a given norm" (Amaro *et al.*, 2003, p.15), and may thus be seen to refer to the same thing. The possible added value of the social exclusion approach to the conceptualisation of poverty lies probably in its explicit focus on the dynamics of exclusion processes – which is absent from most conceptualisations of poverty – and on the relational dimension of the human life. It is within this understanding that the European Union currently conducts joint analyses of poverty and social exclusion (see CEC, 2009), and that Alfredo Bruto da Costa noted the following (Costa, 1998, cited in Amaro *et al.*, 2003, p.20):

> "There may be poverty without social exclusion, as with the poor in the *ancien régime*, where the servants were poor but found themselves integrated in a network of group and community relationships. Something similar may be observed today among the rural poor. Poverty and social exclusion are thus [...] distinct realities and do not always coexist."

2.4 Summary of Key Issues

From the debates about the meaning of poverty summarised here, the following themes are worth highlighting for the purpose of this work.

Firstly, irrespective of the approach for its conceptualisation, poverty always refers to situations of insufficient fulfilment in fundamental domains of human life. As such, it is necessarily anchored on a principled conception of human life and its fundamental dimensions. A defining characteristic of the notion of poverty, as opposed to the related notion of (in)equality, is that it requires that minimum acceptable levels of attainment be defined relative to those dimensions. Without this threshold effect – Sen's 'absolutist core' of poverty – one cannot speak of poverty, but only of inequality. Poverty is grounded on a judgement of the unacceptable in human life.

Secondly, this recognition has spurred the rejection of poverty as relating exclusively to physical needs or to material wealth. It is argued, instead, that a 'humanly lived life' always encompasses a richer array of dimensions than merely those two. Hence the concept of poverty has been expanded to include an increasingly complex variety of dimensions relative to human well-being. In spite of this, difficulties in measuring and defining threshold relative to these multiple dimensions; and the dual recognition that, on one hand, subsistence and physical need are fundamental to all other domains of well-being, and, on the other, that money is the vehicle for ensuring subsistence and the satisfaction of well-being needs in most societies has helped monetary-subsistence conceptions of poverty retain their dominance in the discourse on poverty.

Thirdly, because a notion of poverty reflects wider notions of fulfilment and well-being, different people hold different views of what does and does not constitute poverty. Who defines poverty determines, at least in part, how it is defined.

Fourthly, how one defines poverty determines how one identifies and measures it. In turn, definition and measurement of poverty are crucial to the design of poverty reduction interventions.

Finally, and following from the second and third themes, poverty has evolved to simultaneously mean different things to different people. Today, not only different definitions, but also different measures of poverty are used concomitantly. Usage of the term has thus become very unstable, leading to it losing its descriptive and explanatory power.

3. Ocean Management for Human Development: A Review

3.1 Introduction

There is today a very extensive body of literature concerning interactions between humans and ocean and coastal ecosystems. The diversity of topics and approaches found in this literature is driven by two primary concerns: on one hand, the consequences of human activities for the status of these ecosystems; and on the other, the manner in which the characteristics of the latter shape human lives. These two distinct movements are often also explored together in works dealing with ocean and coastal resource use. Here, a typical narrative considers first how humans utilise and benefit from these resources, and then how this utilisation impacts on ecosystems. With increasing complexity of ocean and coastal management systems, a third strand has emerged in scholarly writings, namely one dealing with the particularities of specific management interventions. It is not uncommon that this third line of inquiry appears in studies addressing the first of the two concerns mentioned above, as many of these interventions are motivated by the impacts of human activities on the natural environment. But, other than in contexts of this type, ocean and coastal policy studies are overwhelmingly concerned with the details of specific interventions and the respective effectiveness.

From this vast literature, this section focuses exclusively on writings exploring linkages between ocean and coastal management and human well-being. In particular, it shall be reviewed what evidence has been produced of the impacts that specific management interventions have had on the lives of people.

The motivation for this review lies in the observation that this type of evidence is scant, despite not infrequent claims about the importance of assessing human and social development impacts of marine management interventions. Gunnar Kullenberg, for instance, argued in respect of research related to coastal urbanisation that "[s]ocial indicators are also of special interest for coastal conditions and urbanisation. These are aiming at reflecting achievements towards the length of life, health, knowledge, standard of living." (2001, p.290). Similarly, Fiona Nunan argued in respect of fisheries in Uganda: "The implementation of fisheries co-management is very recent in Uganda and r*esearch into its effectiveness in reducing poverty*, as well as in improving the productivity of the resources, *is essential*" (2007, p.1162, emphasis

added).[14] Claims such as these contrast with a rather bleaker reality. Two relatively comprehensive reviews of the linkages between poverty and, respectively, fisheries and coral reefs maintain that:

> "However, in line with the predisposition of many programmes towards coral reef conservation, monitoring and evaluation is often focused towards understanding the status of the coral reef resource and the impact of natural changes and human activities on the reef. Attention to the impacts of interventions on the livelihoods and well-being of local poor stakeholders has so far been less pronounced."
>
> (Whittingham *et al.*, 2003, p.53)

> "[T]he extent to which the fisheries sector and its various linked activities (e.g. fish processing, marketing and distribution) contribute to poverty alleviation and food security has been subject to limited study. [...] There is also limited understanding on the impact on poverty (incidence, depth and dynamics) of technological change, community and fishers' organisations, and alternative fisheries management governance regimes."
>
> (Macfadyan & Corcoran, 2002, p.iv)

This review will show that some more evidence has been produced since these two studies were published. It will also become clear, however, that no major expansion of that evidence has occurred. This contrasts sharply with the preoccupation of ecological studies with producing hard scientific data, something that is increasingly shared by studies on marine socio-ecological systems.

What does this paucity of evidence reveal, and why is it of any relevance? To answer the first question, it might reveal two things: first, inability to measure human development impacts. This is highly improbable, as these are measured frequently in other settings – most often in the context of poverty-related interventions – and, as will be shown here, they have been measured also in the context of marine management. Second, the low priority assigned to human development impacts of this latter type of interventions, especially when contrasted with the importance assigned to ecological impacts. Put differently,

[14] Ugandan fisheries are obviously not a case of marine management. Nevertheless, because there are more elements uniting than separating inland and marine fisheries, it has been decided to consider inland fisheries in this review.

marine management is not seen to impact on human development to an extent that justifies investing in the assessment of these impacts. But, as alluded to above, marine management scholars are among those claiming exactly the opposite. This occurs, presumably, because evidence of impacts of that type is critical for the design of interventions that stand better chances of achieving human development objectives that have been considered important in a given context. This is the answer to the second question. Without considering these impacts, one simply does not know how such interventions perform in terms of aspects that – at least as a matter of principle – are central to us humans. This issue is discussed further in section "Comparative Perspective" in relation to the findings from the three countries.

The purpose of this section is to review the evidence reported in (primarily) peer-reviewed literature during the last two decades of the impacts of specific marine management interventions on human well-being. Because of the diversity of interventions and settings found in this literature, less emphasis is put on context-specific findings of each assessment, and more on the nature of the evidence and on the dimensions of human development assessed in each study. Contributions have been grouped and are analysed according to marine sub-sector, of which the following have been selected: fisheries, aquaculture, shipping and ports, marine and coastal conservation, and coastal zone management. The reason for the choice of these sectors is that they are the ones discussed in the case-studies presented in later chapters. A short conclusion closes this section.

3.2 Fisheries

Fisheries is the ocean sector the social dimension of which has most frequently been dealt with in scholarly literature. A larger share of this literature is concerned with how human behaviour and social organisation shape fisheries – and how these affect fishery resources - than with how fisheries, and in particular specific fisheries management interventions, affect human well-being. In the literature concerned with this latter issue, those papers reviewed here may be grouped into three main categories according to the type of evidence produced and how this is presented. The first includes papers where little or no data have been generated, and where authors base their assessment on their (primarily qualitative) observations. Contributions discussing fisheries agreements are found mainly in this group. The second category comprises papers based on own data generated from surveys and which, generically, give an account of

the perceptions of those interviewed. The third group includes four studies in which the authors propose models to explain a given situation. Data for these originate both from own surveys (in the case of Jensen, 2007) and from external sources.

In the first group, one finds an earlier contribution by Clark and co-authors (1988) describing the New Zealand individual transferable quota system, how it was developed and implemented, and analysing its impacts.[15] The analysis covers procedural issues – i.e. how the system works in comparison to the earlier regime for regulating access to fisheries – as well as economic aspects and employment. In regards to this latter issue, the authors estimate the creation of 2,300 new jobs between 1983 and 1986 due to new investments – in particular in the expansion of deepwater fishing activities – following the introduction of the new quota system. The system is said to have increased employment flexibility and decreased risk and vulnerability. In particular, entering and leaving a fishery was facilitated by reduced administrative obstacles to new entrants and by the ease of buying and selling quotas. Risk and vulnerability were reduced by improved ability to adjust commitment to a given fishery in response to changes in markets, technology or stocks; by changing species mix in the quotas; by enabling joint acquisition and pooling of quotas, thereby spreading the risk among several individuals; and by the fact that licenses themselves represent capital that can be traded in case other sources of income fail.

Bailey (1997) narrates the consequences of the ban of trawl gear in parts of the Malacca Strait, but the only aspect pertaining to human well-being discussed by the author is employment in small-scale shrimp fishing and aquaculture. Mention is made of 90,000 new jobs created in small-scale shrimp fishing and pond production as a response to the end of the large scale, export-oriented trawl fishery, but it is unclear how many of these jobs can be ascribed to the trawler ban.

Reflecting on shifts in the South African fisheries management regime in the years following the end of apartheid, Hassler (1999) discusses some of its impacts for coastal fishing communities. In respect of community trusts, which were intended to mediate the transfer of fishing rights to previously disadvantaged groups, the author argues that, due to lack of representation of small-scale fishermen in formal top-down quota management structures, those ended up losing or selling their quotas to large industries, thereby being deprived of a critical source of employment and income. Hassler also gives account of the success of a lobby

[15] An abridged version of this paper was subsequently published in Clark, I., 1993. Individual transferable quotas: the New Zealand experience. *Marine Policy,* 17(5), pp.340-342.

group pressing for the rights of fishermen in the Olifant River estuary. Through this group, fishermen were empowered in their relationship with local and provincial governments, thereby acquiring the ability to face up to diamond mining interests. The result that far had been the involvement of fishermen in a joint planning effort concerning use of estuary resources.

Transformations in South African fisheries is also the subject of a contribution by Isaacs and co-authors (2007). A fairly detailed account of those transformations in the course of the previous one and a half decades is given, particular attention being awarded to the reallocation of fishing rights to previously disadvantaged groups. The authors' critique highlights the following aspects: i) small quotas proved insufficient to sustain the livelihoods of small quota holders in 'high volume – low profit' economy of South African fisheries; ii) "historical and cultural right and entitlement to livelihood from fishing" (p.307) were overrun when small-scale fishermen were excluded from abalone and rock lobster fisheries to give way for exclusively commercial exploitation; and iii) although the number of historically disadvantaged people in the sector increased two or threefold since 1994, much of the earlier regime of ownership and control of companies has been retained and the "transformation process has not led to social justice through the redistribution of wealth" (p.309).

Turning to South-east Asia, Minh (2008) summarises the experience of two community-based fisheries management initiatives in Laos and Vietnam. Both initiatives were intended to enhance community resilience and reduce poverty, the former one also aiming at formalising existing traditional community-based management regimes. The Laos initiative led to virtually no changes in local community conditions, despite the granting of exclusive rights to the resources to communities and the establishment of a community development fund from the meagre income from fisheries. In Vietnam, village clubs were awarded access rights for mussel cultivation, resulting in 15-20 jobs as guard and commissioners and additional 130-150 days of seasonal work, with about 40% of jobs going to women. Credit opportunities for the poor were enhanced by means of a revolving fund, enabling them a share in the production. Finally, the author notes the enhanced ability to engage with outside markets and commercialisation circuits.

Still in the first group of papers, Barclay (2010) offers a summary overview of positive and negative consequences of activities associated with tuna fisheries in Pacific Island states, discussing economic, social and environmental impacts for coastal communities. Mention is made of the fact that coastal communities barely ever receive any direct financial benefits from

tuna fishing license fees, which typically are collected by central government. Employment is seen as an area where those communities have received some benefits in terms of increased job opportunities, but mention is made of the low skills and poor salaries of jobs in canning and loining factories, and of the hardships and low wages of jobs on board fishing vessels. Examples of businesses that have been established in association with tuna industries in coastal communities are given, but no discussion is presented of impacts other than implicit job and income opportunities. Among the negative social impacts, reference is made of disruption to family life because of women working long hours in distant canning factories, as well as to cases of increased alcohol consumption and sex trade associated with shore leaves of tuna vessel crews. In instances where factories attracted outsiders, conflicts between resident and migrant groups have been reported.

Within the same subject and with a similar type of narrative, a number of papers have discussed the virtues and pitfalls of fisheries agreements, most often concentrating on those involving the European Union. Kaczynski & Looney (2000) and Kaczynski & Fluharty (2002) discuss economic impacts of these agreements with Guinea-Bissau, highlighting the "lost opportunity in jobs and hard currency revenues to Guinea-Bissau from use of its principal resource" that the agreements have entailed (Kaczynski & Fluharty, 2002, p.89). The first of these two papers estimates that the country receives in license fees no more than 10.7% and 6.4%, respectively, of the value of unprocessed and processed fish that leaves the country on board European vessels, estimated at close to 177 million USD and 101 million USD, respectively. A single fish processing unit built in the country would offer an estimated 400 direct and 1,200 indirect jobs, the authors estimate. Emma Witbooi (2008), in a paper devoted to exploring the evolution of concepts of sustainability in the European Union's common fisheries policy, also discusses some impacts of fisheries agreements with Senegal, but barely touches on issues of human well-being. As with the two other papers, no data are presented in regards to this latter issue.

Papers in the second group rely on stakeholder perception data collected by means of dedicated surveys. The first of these is a contribution by Nance and co-authors (1994) discussing social impacts of the annual summer closure of the shrimp fishery in federal waters off Texas, based on interviews with shrimp fishing vessel captains. Other than mixed opinions about the fishery closure, the authors report "negligible to modest" (p.90) impacts on employment. These vary considerably between different ports, with respondents indicating varying degrees of

unemployment in fisheries and of engagement in alternative employments. Similar results were obtained for income from fisheries. In the end, despite a generalised perception that most fishermen had somehow been affected by the measure, the authors observe that the type and degree of perceived impacts varied substantially with geographical area, ethnicity of captains and vessel type.

Also relative to the USA, Smith and co-authors (2003) analysed social impacts of the 1994 ban on certain types of fishing nets in Florida. The authors' aim was to explore impacts on family functioning of that regulation, for which purpose they assessed levels of stress and coping capacity among fisherman families before and after the ban. The authors interviewed a total of 44 families, out of the 95 that had been studied one year before the ban was approved. This enabled them to identify possible changes related to entry into force of this measure. Four indexes of stress impact – perceived stress, depression, anxiety and anger, each composed of several indicators – were related by the authors to standard socio-demographic factors and to six independent variables, namely family stress, degree of change in the fishing industry, self-esteem, individual mastery, new job outside fisheries and religiosity. The findings of this study suggest that both men and women were affected by changes in the industry, highlighting that women reported higher levels of depression than men. These, in turn, were more liable to anxiety resulting from family stress, suggesting that the mechanism through which they were affected differs from that observed among women.

Montaz and Gladstone (2008) present a small-scale study of how the banning of commercial fishing in Lake Macquarie affected the lives of local commercial fishermen. The authors based their finding on a total of 11 replies to questionnaires (out of a population of 36) that inquired on socio-cultural, economic and occupational characteristics of commercial fishermen. Nine in-depth interviews were also conducted, focusing on fishermen's perception of the consultation process leading to the ban, and actual social impacts of this decision. In regards to the consultation process, commercial fishermen generally expressed a feeling of exclusion from the decision-making process leading to the ban. Most felt insufficiently informed, both about the decision and the mechanisms for posterior compensation. To the feeling of impotence in comparison to other pressure groups added confusion about future alternatives. The authors highlight other negative impacts of the measure: the loss of jobs both in Macquarie and other locations; the demise of fishing-related businesses; the loss of lifestyles, with limited alternatives for most fishermen; the loss of cultural heritage; and the loss of individual pride

and self-esteem. In the end, the authors highlight two aspects: the fact that the ban had been proposed without any solid ecological evidence; and the importance of anticipating the hardships of commercial fishermen by means of adequate social impact assessment.

In a recent paper, Cinti and co-authors (2010) discuss some implications of the implementation of a formal licensing system in artisanal fisheries in a community in the Gulf of California in Mexico. Although the authors claim the purpose of the paper to be "to describe the local social and fisheries impacts of formal fisheries policies" (p.329), in reality their analysis focuses mainly on the functioning of the permit system and on the manner in which it has been used and abused by the fishermen. In terms of impacts upon the lives of the fishermen, the authors highlight the concentration of power into the hands of a few individuals capable of dealing with the bureaucracies and of supporting license costs, and how this marginalised most of the individuals who actually perform the fishing. Because this latter groups had to rely on permit holders to be able to fish, situations of dependency and often indebtedness have appeared. In addition, because non-permit holders were not recognised by the authorities as parties in the new regulatory regime, they were excluded from decision-making processes affecting their fisheries, as well as from government benefits directed exclusively at permit holders. A situation emerged where those de facto involved in fishing have become invisible to fisheries authorities.

Four studies discuss impacts of management initiatives in inland fisheries. The first of these, by Neiland and co-authors (2005), describes the characteristics of traditional fisheries management systems in use in inland fisheries in Northern Nigeria, and presents a brief analysis of some impacts of these systems on the lives of local fishing communities. The authors conducted interviews with 66 village- and 1316 household heads to gather perceptions and attitudes concerning past changes in the villages, as well as past and anticipated future changes in fisheries. Regrettably, this survey of perceptions says nothing about the impacts of the fisheries management system. In this regard, the only finding that the authors present relates to the fact that, in certain locations, powerful individuals had taken ownership of fisheries, relegating fishermen to the roles of dependent rent payers or salaried employees, thereby eschewing systems based on common access to pooled resources.

The paper by Njifonjou and co-authors (2006) similarly fails to assess impacts on human lives of a fisheries co-management initiative in Aby Lagoon, Côte d'Ivoire. Despite considering a rich variety of dimensions of human well-being, the authors use these primarily to describe the

communities' living conditions and livelihoods, and not to assess how these might have changed with the initiative. The only comments related to this matter regard issues of control over resources, participation in fisheries management and cooperation and conflict reduction. Brief reference is also made to increased revenues from fishing that have been used for public infrastructure and services.

Garaway (2006) studied the distributional outcomes of a fish stocking initiative in a series of community-managed waterbodies in southern Lao PDR.[16] The author used the 'extended environmental entitlements' approach to investigate how that initiative impacted on the rights of access, use and management of fishery resources, on community wealth and on specific capabilities of population groups. These impacts are discussed for each socio-economic group, defined according to a wealth ranking conducted by the author. Data was gathered in four villages where fisheries enhancement was being performed, the number of surveyed households not being given in the paper. Semi-structured interviews were used to elicit fisheries management practices and institutional change, fishery statistics having been retrieved from village records. Household surveys were conducted to collect socio-economic data. Referring to endowments, the author notes that the right of individuals to own or secure fish they had caught was eliminated by the new management regime that followed the stocking initiative. It was replaced by the rights to earn, buy or receive free fish, as well as the right to benefit from the village selling fish (through a community fund). Because decision-making power shifted from the individual to a selected few, villagers experienced a change in the level of control over fishery resources they previously had access to. Benefits identified by the author include higher status from being able to share better quality food with visitors, reduced expenditures with individual contributions to the village fund (both in money and in kind), and increased income from fish sales to outsiders. Reduced opportunities to fish in community ponds were compensated by the opportunity to buy cheaper fish, as well as by the ability to continue fishing in alternative sites, an aspect of particular importance for fishermen. Finally, in terms of differential outcomes for rich and poor, the author maintains that whereas the first were the main beneficiaries of cheaper fish and of enhanced opportunities to entertain outsiders, the latter benefited disproportionally from reductions in household contributions to the village development fund.

[16] A similar paper on the same topic, but exploring primarily procedural aspects of the initiative was published in Garaway, C., Arthur, R. & Chamsingh, B., 2006. A social science perspective on stock enhancement outcomes: lessons learned from inland fisheries in southern Lao PDR. *Fisheries Research*, 80(1), pp.37-46.

The last of these papers, by Béné & Obirih-Opareh (2009), presents a study of how so-called 'brush parks' affected fishing communities on the southern shores of Lake Volta, in Ghana. In particular, they aimed at exploring perceptions about, and socio-economic impacts of, the use of that technology, as well as possible socio-economic determinants behind their application. Perceptions were gathered by means of interviews with the heads of 182 randomly-selected households in 10 fishing communities, of which half employed 'brush parks'. Besides questions on income and ownership and value of fishing gear – used to construct household welfare indices for comparative purposes – the interviews focused on issues of ownership, investment needs, operational costs and attitude towards 'brush parks'. Perceived impacts reported by interviewees included prejudicial interference with fishing gears – potentially limiting the access of non-owners to fishery resources – and negative economic externalities – felt primarily by non-owners, who found themselves unable to compensate losses from lower fish prices through increased catches. The authors show that 'brush park' owners are on average better off, exhibit higher levels of income inequality among themselves and, in the case of wealthier owners, have incomes up to twice as high as non-owners. However, the authors fail to convincingly show that there exists a causal link between ownership of 'brush parks' and both higher income and greater inequality, thus failing to provide evidence of claims that this type of technology induces higher inequality among fishermen

The four papers in the third group have in common the fact that they propose a model to explain the situation being studied. In the first of these, Upadhyaya and co-authors (2002) conduct an economic impact estimation of a set of regulations affecting blue crab fisheries in Chesapeake Bay, USA. The authors adapted an earlier model relating crab harvest with political, ecological and economic (market) factors. Using monthly data covering the fishery period (April to November) in the years 1988 to 1995 from government and industry sources, they estimated that the 1994 regulations had a total cost of 44 million USD per year shared by all industry agents. The impacts of this cost at lower levels – including on individuals – are not explored by the authors.

Also focusing on macro-level impacts of fisheries regulations, Fernández-Macho and co-authors (2008) conducted an assessment of the economic impacts of reductions in hake catch quotas on the Galician economy. The authors used a supply-driven social accounting matrix methodology and aggregate data on employment and value added in fishing and in the whole of the Galician economy, covering the period 1995-2001. Reductions in household incomes

were estimated at over 80 million Euros, being slightly higher for fishing households. Forward impacts on incomes are lower, namely a reduction of 62 million Euros. Backward impact on employment amounted to a loss of close to 2,700 equivalent jobs more or less equally distributed between fishing and non-fishing households, although the former bear a heavier burden when considering the relatively small size of the fishing work-force in the region. The sectors suffering most from the adjustment are those more directly related to harvest, sale and processing of hake, the authors claim.

Jensen (2007) offers one of the most interesting and sophisticated contributions, where he analyses the impacts on fishermen's welfare – measured in terms of profits from the sale of fish – of the gradual introduction of mobile telephone services in a stretch of the coast of the Indian state of Kerala. The author proposes a model to predict the effect of that introduction on market performance in relation to fish products, and tests it with a natural experiment whereby he was able to follow the impacts of mobile technology before and after its introduction. The assessment takes into account market prices, production costs and revenues for fishermen and levels of waste (unsold catches), all in relation to sardine fisheries. Jensen argues that enhanced arbitration resulting from the introduction of mobile technologies resulted in: reduction in waste to zero; increase in sales (from reduction in waste); decrease in producer price per kg; increase in revenues, but also increase in production costs (partly from phones, but also from transport distances, since fishermen travel greater distance to markets offering better deals), and overall increase in profits. Impacts on consumers were found to be a reduction in prices to consumers and an increase in consumer surplus in sardines.

In a recent contribution, Béné and co-authors (2010) analysed the extent to which the involvement of African countries in external fish trade relates to the respective level of human development. To this end, based on panel data from FAO – for fisheries-related data – and from UNDP and the World Bank – for socio-economic data – they compared indices of the degree of openness to external trade in fishery products with indices of human development. The former included measures of size of fish production and exports, value of fish exports and presence of fishery agreements with the EU, whereas the latter comprises the indicators mortality rate, malnutrition prevalence, mean monthly per capita income and GDP per capita. The effects of fish trade activities on human development were estimated by regressing the latter human development against the former fisheries-related indicators. In the end, "despite a wide range of models and indicators tested, and after controlling for potential endogeneity and effects of

growth-related variables reflecting trade environment, good (or bad) governance, infrastructure, and macro-economic context, no demonstrable correlations were found between fish trade and economic and/or human development in sub-Saharan Africa" (p.940).

3.3 Aquaculture

Social impacts of aquaculture have been a recurrent concern in scholarly writings about this sector. The golden age of (often donor-sponsored) expansion of intensive forms of aquaculture in the tropics in the 1970s and 1980s was quickly picked up by disillusionment with its numerous pernicious effects on the environment, as well as on peoples' lives. Two 'classic' papers on this latter issue, by Bailey (1988) and Primavera (1997), review the findings of other authors in terms of social impacts of shrimp aquaculture in the tropics and the Philippines, respectively. These two authors apply similar strokes in painting their pictures of these impacts, namely that aquaculture developments had led to i) privatisation of previously common-access multi-use resources and spaces[17]; ii) economic marginalisation of poorer people unable to invest in aquaculture and, simultaneously, facing higher land prices; iii) unemployment among locals, due to the labour-saving character of aquaculture and to impediments to access to natural resources; iv) political dis-empowerment of the poor in favour of rich investors capable of mobilising government resources to themselves; and v) reduced food security, both from destruction of and limited access to coastal resources, and from disruption of local agricultural systems.

Also in 1997, Stonich and co-authors reviewed aquaculture developments in Latin America. Their findings are similar to those just enumerated. In particular, they draw attention to conflicts between stakeholder groups, which, in a case in Honduras, had assumed particularly grave proportions, with threats, imprisonments and loss of life. Rajagopalan and Surendra (1998) arrive at comparable conclusions in respect of the social impacts of government-led private aquaculture promotion in India. To the list of negative impacts in the paragraph above, they add increased pollution levels and worsened sanitary conditions due to fish farm effluents. More recently, Marta Rivera-Ferre (2009) considered a number of aspects related to the liberal, export-oriented nature of shrimp aquaculture. In reviewing associated social consequences, she

[17] In this regard, Bailey (26. 1988) states (p.37): "Stripped to its essence the expansion of shrimp mariculture into mangrove habitat generally involves the transformation of a multi-use/multi-user coastal resource into a privately owned single-purpose resource."

focuses on compromised food security attributed, in part, to declining fisheries caused by intensive farming systems, presumably (the link is not explicitly made by the author) from habitat destruction and effluent pollution. The author offers other arguments related to how industrialisation of fisheries overshadowed its subsistence functions, where she seems to imply that such process always accompanies export-led shrimp aquaculture. However, the author fails to clarify this alleged concomitance, and consequently, to make those arguments convincing.

In the course of the last decade some studies have been published that offer more than a narrative overview of aquaculture's social impacts, and instead present own data on these. Data originate from interviews with fish farmers – in one case also rice farmers (Pradhan & Flaherty, 2008) and in another with a random selection of households in aquaculture-adopting communities (Irz *et al.*, 2007) – to gather quantitative socio-economic data and to elicit perceptions about specific aspects of the interviewees' lives, as well as about aquaculture activities. Field observations are mentioned in one of the cases (Bergquist, 2007).

Irz and co-authors (2007) return to the impacts of aquaculture in the Philippines, focusing on income equality, and, to a lesser extent, on employment. From the observation that poor and extremely poor households derive a greater share of their income from aquaculture than non-poor households, they suggest that aquaculture is pro-poor: "[T]he poorer the household, the more critical aquaculture is in income generation" (p.504); and that it has an overall beneficial effect on income equality: "[A]quaculture growth has a strong levelling effect on the distribution of income in these [adopting] communities" (p.506). The qualitative part of the survey drew attention to the risky nature of aquaculture; the existence of entry barriers into the sector, felt in particular by those lacking adequate knowledge and access to land and capital; and the high cost of inputs to production, often beyond the financial capacity of households.

Pradhan and Flaherty (2008), having interviewed 60 shrimp farmers and 40 rice farmers in the Indian state of Orissa, highlight the seasonality and the generally precarious conditions of low-skilled employment in aquaculture. Manual labour is required for pond construction and harvest, but, on average, the need for labour is less than in rice farming. For those employed in shrimp farms, employment tends to be longer term when compared to rice farms, although with lower wages. What is more, because sustainability and profitability of shrimp farms is on average much more volatile than that of rice farms, employment in the former carries greater risks. The authors also found that women were not involved in shrimp farming, mainly due to the remoteness of the farms, which interferes with women's household responsibilities and

carries potential security risks. In addition, women were also found to be the main victims of reduced access to coastal lands and resources resulting from changes to property rights along the coast that accompanied shrimp farm concessions. In some cases women were forced to travel longer distances to collect firewood, whereas in others they saw the lands that they previously used converted into shrimp ponds. A consequence has been a decline in women's contribution to household income.

Evidence of the contrary is reported by Hallman and co-authors (2003), who reviewed the outcomes of projects aimed at improving polyculture fish production technologies in poor rural areas of Bangladesh. These authors found positive effects of the successful adoption of technology on the empowerment of women: earning an income may increase their decision-making power in the household, and selling products at the market creates opportunities to move into public spaces. It should be noted, however, that this study assessed small-scale extensive aquaculture schemes, whereas Pradhan and Flaherty's analysed larger intensive and semi-intensive farms.

Small-scale aquaculture is also the subject of Bergquist's (2007) paper, who conducted a comparative study of this sector and of some of its socio-economic impacts in Sri Lanka and the Philippines. Participatory rural appraisal techniques were used to gather the views of a total of 151 individuals, including farm worker, owners and investors, in 28 farms in Sri Lanka and 19 in the Philippines. Although the author proposes to discuss the contribution of aquaculture to poverty reduction, his findings hardly relate to this intent. Instead, most of the discussion focuses on the characteristics of aquaculture activities in the study sites. In terms of impacts on people's lives, Bergquist notes that the higher the level of ownership of the farms, the greater the contribution of those involved in aquaculture to decisions relative to this activity. In Sri Lanka it was also found that semi-intensive farms actually employed more people, contradicting evidence from elsewhere that intensive and semi-intensive shrimp farming is capital, but not labour, intensive.

Finally, Murshed-e-Jahan and co-authors (2010) conducted an assessment of the impact of an aquaculture development project on the level of food security among farmers in Bangladesh. Data were gathered by means of household surveys among 225 adopting farmers and 126 non-adopting farmers in four project sites, the latter being used as control. A census of ponds in the study sites was conducted to gather data on wealth status of pond owners, ownership patterns and technologies used. In terms of impacts, the authors found a higher growth of household

income, as well as higher monetary returns from fish culture among project farmers than among control farmers. Total labour (family plus hired) was found to increase by over 10% in the period 2002-2006 in project farms, as opposed to a decrease of over 1,5% in control farms. More importantly, both labour productivity and returns to family labour improved significantly in project farms in comparison to control farms. A shift in occupation was also found in project farms, the number of households reporting aquaculture as their main occupation growing from 4% before the project to 10% after. Fish consumption was found to increase more sharply among project households than among control households, the reverse being true for the consumption of staple foods such as cereals. Total consumption of self-produced fish was significantly higher among project households than among control households. Among the former, the authors also observed a more marked increase in the distribution of fish as gift to neighbours and relatives, an aspect of socio-cultural importance among Bengali communities. The authors suggest that higher fish production among project farmers will enable them to increasingly fulfil fish consumption needs from their own production, while higher incomes will facilitate the purchase of fish from other sources. Both ways contribute to enhancing food security.

3.4 Shipping and Ports

Maritime policy is not a particularly prominent subject in the international scientific literature, especially when contrasted with fisheries and, increasingly, coastal and ocean resources management policy. In that relatively sparse body of literature, works that are concerned with linkages between maritime policies and human development are in even shorter supply. Pedersen noted back in 2001 that transport in general had largely disappeared from studies on economic and regional development. This is all the more true of studies on shipping and ports. In a recent paper where Ambe Njoh (2008) analyses the implications of transport services and infrastructure for development in Africa, maritime services are completely overshadowed by road and rail.

In two distinct studies published in 1986, Vogel (1986) and Levikov (1986) discuss how the development of multi-modal transport was predicted to impact on developing countries. At that time containerisation was a relatively recent development, and developing countries were concerned, among other things, that it i) would not suit them since it was capital intensive and labour-saving; ii) would lead to increased concentration of operations in the hands of large

international operators from richer nations; and iii) would require a new set of international rules that would circumvent national ones in areas such as cargo reservations, customs, inland transport and insurance, among others. According to Harding and co-authors (2007), after 20 years the fears of developing nations proved to be correct. None of the analyses, which focus primarily on technical, legal, administrative and economic impacts of containerisation (Vogel) and the respective tariff rules (Levikov) discuss human well-being at any length. Similar concerns animated Iheduru's (1993) well-structured critique of the application of 'western' privatisation models to the maritime sector in West Africa. Offering a good insight into the constraints faced by transport sectors in the region that discourage the adoption of such models, the analysis focuses almost exclusively on issues of port and shipping efficiency. Other than this, only very brief mention is made of potential impacts of reforms on prices to consumers.

Van Niekerk (2005) discusses roughly the same issue after an initial round of port privatisation in South Africa. Her analysis concentrates on issues of economic, financial and administrative performance of ports, singling out reductions in labour costs as the aspect with greatest potential to decrease operational costs. In the context of post-apartheid South Africa, this financial objective might conflict with others related to 'black economic empowerment' and is expected to be fiercely opposed by strong militant labour unions, the author argues. On the issue of maritime labour, Noor Apandi (2004) presents some data relative to training and employment opportunities for Malaysian seafarers. The author argues that measures to attract new entrants to the shipping industry had succeeded in increasing the number of trainees, but that these faced limited employment opportunities on board Malaysian-flagged vessels because of shipping companies' preference for foreign crews. No further implications of this situation are explored.

In the tradition of studies of the economic impact of shipping (see Haralambides, 1996), Liang and Zhao (2009) explored the effects that developments in the maritime industry in China's Liaoning Province have had on regional economic development. The only measures used included aggregate income, employment and tax levels. In an earlier study, Boske and Cuttino (2003) had expanded the traditional impact analysis of international shipping by adopting a detailed perspective of the coffee and steel trade chains between the United States and Brazil. Impact is considered in terms of added value measured as turnover at each link in the chain. A careful analysis is made of operational, organisational and regulatory aspects of these links, but only in regards to their functions within the chain.

Specifically in the port sector, so-called 'port impact studies' have featured repeatedly in the literature since the late 1970s. Their fundamental aim and scope have remained remarkably unchanged since, despite numerous methodological refinements.[18] Their aim is typically to estimate the economic impact of port establishment and operations. This impact is, in the majority of cases understood in terms of income, employment and taxes attributable to port activity, Randall (1988) having also mentioned purchase of goods. Impacts are measured on the economy of communities in the vicinity of the port and which interact with it – the so-called 'local economy'. Results are usually presented in aggregate form – e.g. total wages or employment per type of firm or sector in the study area – although attempts have been made at disaggregating changes in employment (Musso, 2000) and wages levels by type of job (Warf & Cox, 1989). So far, this is the type and extent of evidence that port impact studies have had to offer.

One aspect in particular has been discussed by Randall (1988) and Baird (2000), namely the implications of port authorities' responsibilities in terms of the occupation and use of public spaces. Randall drew attention both the historical involvement of American ports in water-dependent manufacturing firms and to the growing influence of port authorities in decision-making processes relating to various non port-specific domains of public policy. He argued that port impact studies had failed to capture those non-marine dimensions of port (authorities') activities as part of a port's wider sphere of influence. Baird, in turn, fiercely opposed the way in which the new private port authorities in Britain had been granted control over the public good in large waterfront sites, arguing that this had compromised social development in terms of mobility, housing and environmental quality. Moreover, he maintained, that transfer of authority had been done without adequate involvement of local public authorities and communities.

[18]Two of the earlier studies include Waters, R.C., 1977. Port economic impact studies: practice and assessment. *Transportation Journal*, 16, pp.14-18 and Chang, S., 1978. In defense of port impact studies. *Transportation Journal*, 17, pp.79-85. For dynamic assessments see Yochum, G.R. & Agarwal, V.R., 1988. Static and changing port economic impacts. *Maritime Policy and Management*, 15(2), pp.157-171 and Warf, B. & Cox, J., 1989. The changing economic impacts of the Port of New York. *Maritime Policy and Management*, 16(1), pp.3-11. More recently a model has been proposed for dynamic studies combining traditional approaches with system dynamics, in Castillo, J.J., López-Valpuesta, L. & Aracil, M.-J-, 2007. Dynamising economic impact studies: the case of the Port of Seville. In: P. Coto-Millán & V. Inglada, eds. 2007. *Essays on Transport Economics*, Contributions to Economics Series. Heidelberg: Physica Verlag, Ch.12. A recent review of the subject can be found in Francou, B., Carrera-Goméz, G., Coto-Millán, P., Castanedo-Galán, J. & Pesquera, M.A. Economic impact study: application to ports, chapter 10 in the same edited volume.

In a recent study on Sardinian ports, Michele Acciaro (2008) briefly expressed a related concern, namely that negative social and environmental impacts of port – and, for that matter, shipping – operations are usually observed locally, while benefits typically extent beyond the immediate vicinity. His analysis, unfortunately, does not address any of those impacts, focusing exclusively on changes in employment levels.

3.5 Marine and Coastal Conservation

It is generally accepted today that nature conservation has to pay adequate regard to the needs and aspirations of people affected by the respective measures. This acceptance might be justified on two distinct grounds, moral and instrumental. The former results from the need to compensate those people for any impairment to their livelihoods and well-being arising from imposed restrictions to access to and use of resources upon which they depend. At the very least it involves trying to minimise any such impairment. Put differently, it is the recognition that the costs of nature conservation should not be borne disproportionally by a group of people alone. This is particularly relevant in conservation initiatives in areas where populations rely heavily on local natural resources. Later in this document one such case is discussed, namely that of the Luiz Saldanha Marine Park in Portugal. It opens up for a brief reflection on the sharing of costs and benefits from marine conservation.

On instrumental grounds, it is argued that any conservation initiative that is better aligned with the needs and aspirations of local populations stands better chances of counting on their acceptance of and compliance with the restrictions it imposes, thereby increasing the prospects and reducing the costs of success in implementation. In spite of these arguments, and of the fact that most conservation initiatives today involve detailed studies of local social, economic and cultural conditions, relatively little attention has been devoted in peer-reviewed literature to the impacts of marine and coastal conservation initiatives on the well-being of human populations.

In the course of the last decade, a number of studies on Philippine conservation initiatives have been published where stakeholder perception data were used to assess impacts, following the data collection framework originally described by Pomeroy and co-authors (1997). In brief, this framework quantifies perceptions of stakeholders by means of a variable number of so-called 'performance indicators' in three main categories: equity, efficiency and sustainability. The first

of these categories includes those indicators more directly related to human well-being, which, in the case of Maliao & Polohan (2008, p.419), are: participation in resource management; influence over resource management; control over resources; fair allocation of access rights to resources; household income. A random sample of stakeholders is then asked to assign a value between one (min.) and ten (max.) to each indicator using a visual ladder-style scale. Measures of current perceptions were often accompanied by backward recollection and forward prediction.

The first of these papers, by Katon and co-authors (1999) surveyed 42 households equally representing members and non-members of a fishermen organisation responsible for managing the San Salvador marine sanctuary and reserve. Members and non-members alike reported statistically significant perceived increases in knowledge of fisheries, information exchange, satisfaction with fishery arrangements, benefits from the marine reserve, and quickness of resolving community conflict, suggesting an overall positive impact of the marine reserve on their lives.

Baticados & Agbayani (2000) offer a study of a community-based fishery resource management initiative implemented in Malalison Island.[19] Their findings reveal that almost two thirds of fishermen had increased their incomes, having also registered higher job diversification away from fishing and lower reliance on fish for food. Positive changes were also felt in control over fishery resources, fair allocation of rights and involvement in fisheries management. Interestingly, in respect of fishing rights allocation, it was non-project fishermen who perceived higher positive changes, which the authors interpret as satisfaction from not having been prevented access to fishery resources despite not being part of the co-management structure. Collective decision-making, as well as conflict resolution was perceived to having become easier.

Webb and co-authors (2004) studying the Sagay Marine Reserve, found a relatively high level of satisfaction with the levels of accessibility to fishery resources, ability to participate in fishery management and opportunities for earning an income from fishing. Because interviewees reported similar levels in their backward recollection, the authors concluded that

[19] A similar study was published by the same authors in Agbayani, R.F., Baticados, D.B. & Siar, S.B., 2000. Community fishery resources management on Malalison Island, Philippines: R&D framework, interventions and policy implications. *Coastal Management*, 28(1), pp.19-27. These two works deal with what is formally a fisheries management initiative, but because the underlying methodology was used more extensively to assess broader coastal conservation initiatives, it was decided to include their review under this heading.

the reserve was not to praise for the positive evaluation. An aspect that had shown improvements and was expected to improve further in the future was the level of cooperation between fishermen and government. Similar improvements were recorded for the incidence of conflict, suggesting that the reserve had had a beneficial effect in terms of a building a more cooperative environment. Related to this, the authors found a high degree of awareness of reserve-related matters among women, suggesting some form of involvement in management of the reserve.

Writing about a coastal conservation initiative in the central Visayas region, Maliao & Polohan (2008) report a significant perceived reduction in household income with the establishment of the MPA, which was not perceived to improve in the future. Similarly, a significant reduction in access rights to use mangrove resources was also recorded, suggesting some inequality in the allocation of these rights in favour of external aquaculture operators. Importantly, the authors noted that women expressed a more negative view on reductions in income and fish abundance, which the authors attributed to women's keen perception of resource scarcity. Interestingly, the study suggests an increased level of social empowerment of community members, manifested in a perceived increase in the degrees of participation in and influence over mangrove management, as well as control over the use of mangrove resources.

Still on the Philippine experience with marine conservation, Oracion and co-authors (2005) present an analysis of perceptions of member of two communities in Mabini, where a marine protected area had been established, exploring in particular the relationship between fisheries and tourism sectors. The authors discuss primarily the level of satisfaction of the different stakeholders with certain aspects of MPA management, and not really the actual or perceived impacts of the MPA on the stakeholders' lives.

Heidi Gjertsen (2005) studied the impacts on human welfare of the establishment of MPAs in the Visayas region in the Philippines, using nutrition status of children under five years of age as proxy for welfare. The author also relates welfare with the health of coral habitats and with various aspects of MPA management. The key findings of her study include: i) the number of years since MPA establishment has no effect on reef health or on child nutrition; ii) the size of fish catch has no effect on the proportion of underweight children; iii) the application of large fines are associated with worsening of child nutritional status; iv) the existence of public water supply at home has a positive effect on child nutrition; v) a higher proportion of business owners in the village is associated with improved child nutrition; vi) political stability has a

positive effect on child nutritional status; and vii) tourism has a negative effect on child nutrition. Overall, the author found no significant MPA design factors that contribute to improved child nutritional status, something she argues "may be partially due to a true lack of effect and partially due to time lag issues and inability to control for many of the variables determining child nutritional status" (p.211).

Aswani & Furusawa (2007) conducted an assessment of the impacts of the establishment of a network of marine protected areas in western Salomon Islands on food security and on the nutritional and health status of resident populations. Data for the study were collected from five MPA villages and one non-MPA village - used as control site – relating to issues of MPA effectiveness, poaching, conflict resolution and enforcement, food security and perceptions of environmental change. Food security was measured among a randomly selected sub-set of households in each study site by means of a 24-hour dietary recall method. The authors found indications of association between intake of proteins and energy and MPA effectiveness, but also pointed out the influence of other factors, namely degree of modernisation on dietary habits. The longitudinal study in one of the villages suggested an increase in consumption of protein from marine species, although inter-individual variations precluded significance of these results. Somewhat surprisingly, having observed a slight increase in the proportion of malnourished individuals, the authors maintained that "MPAs can be of great benefit to local peoples in fostering the availability of marine resources, food security, diet and health" (p.558). Their argument is that the quality of MPA governance may be more relevant for nutrition and health than mere MPA existence. In the end, the authors recognise the absence of a significant relationship between MPAs and food security and health, admitting that other socio-economic and ecological variables also play a role. They conclude, however, that in the studied cases MPA establishment had not had a detrimental effect on those two dimensions of human well-being.

Amber Himes (2003) again used stakeholder perception data to evaluate outcomes of a marine conservation initiative in Europe. Her study investigated the impacts of the establishment of two MPAs on fishing communities in Northwest Sicily, besides also assessing issues related to the efficiency of management of the reserves. From interviews with 94 small-scale fishermen (out of a total of 147) from villages surrounding the MPAs, the author found a generalised lack of knowledge about the reserves' boundaries, and in one of the sites about the reserve's regulations, a situation that hinders fishermen's adherence to MPA rules, as well as their

potential contribution to MPA advocacy. Fishermen themselves complained about limited or no involvement in decision-making processes related to the management of the reserves, which, in one of the cases, fishermen claim to be a determinant of its overall lack of management efficiency. One of the consequence of this state of affairs, Himes notes, was "decreased compliance with all reserve rules and emotions of alienation and anger" (p.399). The accompanying mistrust was seen as the key obstacle to cooperation between managers and local stakeholders in the management of both MPAs. Other than an escalation of conflicts between fishermen using different gears and from different locations – fuelled, in part, by a generalised unwillingness to report illegalities – the author also gathered complaints about reduced access to fishing grounds, which limited catch volumes and income from fishing.

Oikonomou & Dikou (2008) offer a similar study in respect of the Alonissos marine park in Greece, having gathered perception data on general attitudes towards the establishment of the park, of its socio-economic implications, and of the effectiveness of its management among 181 individuals from the eight main stakeholder groups of the park. The results are useful to understand how perceptions differ between different stakeholder groups, but because the authors do not present any factual data, are of limited use for assessing actual impacts of the marine park on the lives of the affected people.

Finally, Tobey & Torell (2006) present the results of a relatively large survey of poverty impacts of MPA establishment and management in Tanzania. Living conditions were assessed in terms of demography and socio-economic conditions; perceptions of determinants and manifestations of poverty; household consumption and income; material quality of life, including public infrastructures; social capital; education; health; food security; and community involvement in MPA. Using data from household surveys, complemented by focus group surveys and key informant interviews – comprising a total of 749 households in 24 villages (25% of which were non-MPA villages used as control) in six sites – the authors report the following: i) most villages did not perceive a significant impact of the MPA on peoples' ability to influence decisions regarding ocean and coastal resources (in spite of this fact, there was increased involvement of women in village groups and in decision-making); ii) there was a small increase in levels of conflict, partly due to perceptions of inadequate community participation and of inadequate rules, and partly to uneven application of fishing regulations; iii) comparing project and control villages, significant improvements consisted in increased availability of protected water sources, membership in environmental groups, perceived fish

catches and perceived state of local economy, increased membership in credit and savings associations and decrease in use of shore as toilet.

3.6 Coastal Zone Management

This sub-section reviews articles about coastal zone management initiatives other than those aimed specifically at nature conservation. There is, necessarily, great diversity among these initiatives. They are, nonetheless, united by a concern about how humans derive their livelihoods from and thereby alter coastal ecosystems. Indeed, the archetypal paper on coastal zone management goes from this analysis of uses – and, often, abuses – of coastal resources to propose a series of management measures intended to reconcile human needs with environmental capacity (illustrative examples include Ngoile, 1997; Odada, 1997; Masalu, 2000; Andreeva *et al.,* 2003; Tagliani *et al.*, 2003; Samarakoon, 2004; Glavovic & Boonzaier, 2007). From here, an important body of literature on the subject has emerged, where implementation of those measures is reviewed and assessed. With few exceptions such reviews and assessments have not looked beyond procedural aspects of coastal management initiatives, stopping at the level of what Olsen termed 'second-order outcomes' (Olsen, 2003; illustrative examples include Pomeroy & Carlos, 1997; Moffat *et al.,* 1998; Lowry *et al.*, 1999; Peart *et al.,* 1999; Anker *et al.*, 2004; Pinto, 2004; White *et al.*, 2006; Cao & Wong, 2007). In what follows, a review is presented of assessments of third-order outcomes relating to human development.

Rapaport (1996) and South & Veitayaki (1997) offer two separate contributions dealing with sea tenure regimes in the Pacific. Despite not exploring human development impacts at much depth, both draw attention to the pernicious effects that the imposition of western tenure regimes during colonial rule has had for the ability of islanders to secure livelihoods based on marine resources. Rapaport identifies 'territorial dispossession' as the central motive behind indigenous resistance to shifts in management regimes, while also noting that this resistance in part is due to fears of reduced access to valuable pearl oysters, a key source of income for locals. The latter two authors restrict their diagnosis to the resulting confusion over ownership and use rights in fishing, something they claim has been at the root of conflicts. Both studies are merely descriptive, no quantitative data being presented.

Hue and Scott (2008) studied how a small Vietnamese community moved from sustainable use of mangrove forests to rather unsustainable livelihoods dependent on aquaculture. The authors

link this process to large-scale transformations associated with dominant political and economic paradigms sweeping through the country in the course of several decades. Using data from their own survey among 36 (out of 180) community households – with questions pertaining to access to, use and management of mangrove resources and aquaculture – the authors report the following: i) large incomes from shrimp farms accrue primarily to the rich, who have adequate skills and resources to buy inputs to production; ii) encroachment of communal land by state and private ponds, preventing girls and women to continue harvesting marine resources on the coast; and iii) high level of indebtedness among owners of ponds affected by diseases. Indebtedness in turn has led to illnesses, associated with stress from the inability to pay back loans; reduced schooling, in particular for girls; girls and women having to give food for male siblings in cases of food shortage; reduced chances of finding husband and building family for girls of indebted households; and overall greater levels of anxiety among indebted households. The boom-bust phenomenon depicted by these two authors finds parallels in much literature on aquaculture, as discussed above.

Finally, in a recent contribution, Torell and co-authors (2010) summarise the findings relative to the impacts of initiatives for the promotion of alternative livelihoods implemented as part of the US-funded SUCCESS coastal management programme in Tanzania, Nicaragua and Thailand. In particular, they assessed the factors behind the success of such initiatives, as well as the type and extent of the impacts that these had had on monetary and non-monetary aspects of peoples' lives. The study was based on surveys conducted in the three countries, with a total sample of 847 interviewees from project and control sites. These surveys were complemented with focus groups discussions and key informant interviews. Findings of the impacts of livelihood interventions revealed that new enterprises tended to be add-ons to existing activities, thus constituting a supplementary form of income and thereby enhancing households' economic resilience. Income levels from new enterprises were seen to be higher in trading activities, while coastal-resource-based ones fared less well. Group enterprises were found to be less successful in terms of revenue generation than individual ones. Overall positive effects of livelihood interventions were observed by the authors in terms of higher self-esteem relative to business skills, as well as of improved community cohesion and improved coordination between the community and local government. Finally, the authors argued that initiatives tended to favour women disproportionally in relation to men, offering them income-generating opportunities that they would otherwise not have.

3.7 Conclusion

This section set out to investigate the evidence relative to human development impacts of marine management initiatives published in scientific literature. To this end, peer-reviewed articles of the last two decades concerned with those impacts in the different ocean sectors were reviewed. Particular attention was paid to the methodologies used, the human development dimensions considered, and the results reported in each study. No explicit set of dimensions was chosen to define human development; instead, the dimensions proposed by each study were taken into consideration, which implies that these were accepted as adequate for that definition, even if to variable extents as per the specifications of each study.

This review has shown that the number of studies addressing human development impacts of marine management interventions is currently limited, especially when contrasted with the vastness of the literature on any of the sectors considered. Of the reviewed studies, most rely on small-scale surveys of stakeholder perceptions of the outcomes of a given intervention. In some of these, attempts have been made to relate these outcomes with specific aspects of the intervention – such as management efficiency or degree of stakeholder involvement – or with outcomes of the intervention at other levels – for example the level of restoration of natural ecosystems. Because data for these studies are obtained by participatory methods, a broader variety of human development dimensions is generally considered. A smaller number of studies have been identified that assess impacts at larger scales. These were found in fisheries and in maritime transportation, in the latter case often in the form of port economic impact assessments. In general they involve the construction of an explanatory model that is then tested by empirical data collected by the authors or from secondary sources. Studies of this kind typically limit the assessment to economic aspects of well-being, such as revenue and, in some cases, employment.

Inquiring about the human development implications of marine management interventions may be justified by the fact that, more often than not, humans are an integral part of ecosystems. Indeed, it is often because humans act on ecosystems that the need for corrective management interventions arises. Hence measures to manage ecosystems usually affect human lives. If not for reasons of social justice, then at least for the purpose of knowing the impacts of those measures on one of the elements of the managed system, it is important to assess well-being impacts of those interventions. That this is seldom done contradicts the stated objective of many of these interventions, which often are justified on the basis of anticipated objectives

relating to human well-being. However, as this review shows, the evidence produced in regards to these benefits is patchy, and in general insufficient for properly assessing those benefits for the purpose of improving the design of interventions.

It is maintained that human development is not the only relevant criterion against which marine management interventions should be assessed. Often it is not even the most relevant one, as issues of environmental sustainability, safety and security – to name a few – may take precedence over well-being concerns. Issues such as these may, in some instances, be necessary conditions for human well-being and development – and hence be of relevance for poverty reduction - at the same time as they impose restrictions on these aspects. The issue is arguably one of attempting a balance between attaining an adequate level of success in each of the relevant criteria, as suggested in chapter one.

An important issue to raise here is: what happens if one explicitly adopts an absolutist concept of poverty, instead of the more relativist one of human development, as did most of the studies in this review? How is that balance affected when one is confronted with the moral urgency of reversing situations of unacceptable non-fulfilment in fundamental aspects of human life? When one goes from the mere analysis of interventions – which the studies reviewed here are largely concerned with – to their design, then the moral imperative of addressing the unacceptable might force a reconsideration of that balance.

Finally, it should be recalled that this review only includes peer-reviewed literature in the English language. While this is currently the preferred medium for disseminating scientific results, it should be acknowledged that policy impact assessment studies often do not find their way into this literature. Hence it cannot be excluded that this review might have overlooked relevant findings documented elsewhere.

PART II

Case-studies

The next three chapters report the findings from the case-studies carried out in CV, Portugal and STP. Following the objectives set for this research, their aim is to explore how poverty-related issues have permeated ocean sector analyses and policies in these countries, as well as how the respective poverty reduction strategies frame the contribution of ocean sectors to national poverty reduction efforts.

The three case-studies share a common structure, including first a discussion of each country's ocean sectors and of the respective policies and related interventions, followed by a review of the poverty situation in the country and of the main poverty reduction interventions. The ocean sectors discussions concentrate on the respective socio-economic dimensions, in particular on poverty-relevant aspects. Matters of a technical and environmental nature are addressed only to the extent necessary for an adequate understanding of the sectors and the respective policies.

4. Cape Verde

Cape Verde is an insular state composed of ten island, nine of which inhabited, and several islets, located about 300 nm to the west of Senegal (Figure 2). A Portuguese colony between its discovery in 1460 and independence in 1975, it has since witnessed rapid socio-economic progress. Approximately half of the estimated one million Cape Verdeans currently live outside the country, primarily in the USA and Western Europe.

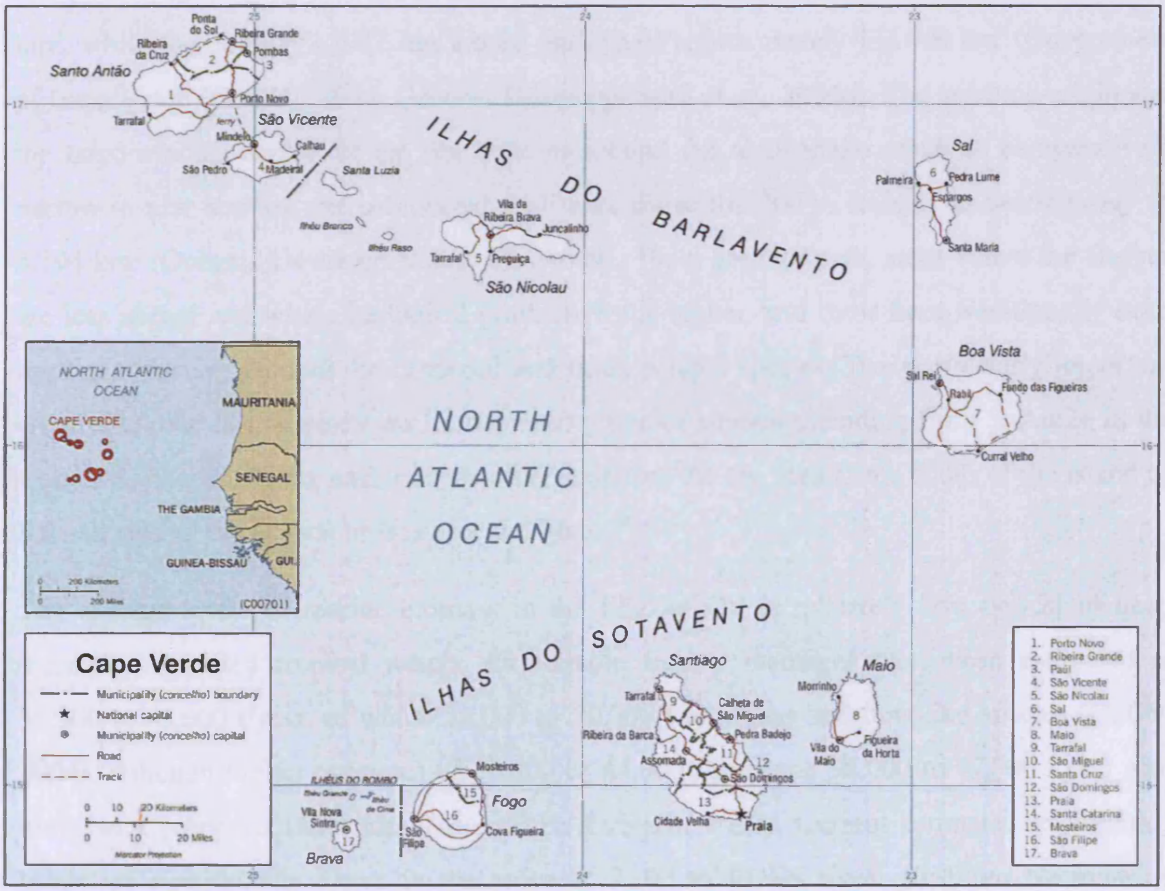

Figure 2 - Map of Cape Verde
(Source: http://www.lib.utexas.edu/maps/cape_verde.html)

4.1 The Cape Verdean Fisheries Sector

The fisheries sector in Cape Verde is dominated by traditional, small-scale fishing. This is due, primarily, to an historical paucity of capital for investments in the sector, a situation that is common to most African fisheries (Heck *et al.*, 2007). Since the country does not have an operational distant water fishing fleet, its fisheries sector is shaped exclusively by the resources available in national waters, principally those closest to shore.

The coastlines of CV's ten largest islands total 1,018 km in length, for an emerged area of 4,033 km^2, while the country's EEZ has a total surface of approximately 734,000 km^2 (Government of Cape Verde (GoCV), 2004; Oceanic Développement *et al.*, 2004a). The volcanic origin and the large average depths of the sea bottoms around the archipelago result in comparatively narrow insular shelves, the submerged shelf area above the 200 m isobath amounting only to 5,394 km^2 (Oceanic Développment *et al*, 2004a). There are, however, areas where the shelves are less abrupt and where biological productivity is higher, and these have traditionally been important fishing grounds for demersal and small pelagic species. Two particularly important areas exist, one in the windward (*barlavento*) group of islands extending from S. Antão in the west to S. Nicolau in the east, and the other spanning the sea area to the south of the island of Sal and around the islands of Boavista and Maio.[20]

The average levels of marine biomass in the EEZ of CV is relatively low, typical of deep thermally stratified tropical waters. Exploitable fishery resources have been estimated at 32,500 to 41,600 t/year, of which 25,000 to 30,000 t are tunas and tuna-like species (GoCV, 2004), although higher estimates of 36,000 to 44,000 t/year and 38,000 to 47,000 t/year also have been proposed (Almeida *et al.*, 2003; Fonseca, 2000). Current estimated exploitation levels are significantly lower, in the range of 7,500 to 10,800 t/year (Instituto Nacional de Desenvolvimento das Pescas [IDNP], N.D.; GoCV, 2004; Fonseca, 2000). Foreign fleets operating in Cape Verdean waters – most of which are European vessels operating under the fisheries partnership agreement with the EC - only rarely report their catches (E. Carvalho, pers.comm.; see Commission Mixte, 2009).[21] In any case, estimates point at largely

[20] The following abbreviations of the names of the islands are used throughout this document: BR-Brava; FG-Fogo; ST-Santiago; MA-Maio; BV-Boavista; SL-Sal; SN-São Nicolau; SV-São Vicente; SA-Santo Antão. The name of the tenth island, Santa Luzia, is usually not abbreviated.

[21] Edelmira Carvalho, Directorate-General for Fisheries, personal communication on 5 January 2010, Praia, ST.

underexploited fish stocks, the only notable exceptions being the high-value lobster fisheries, which are considered fully exploited in the case of deep-water muddy spiny lobster (*Palinurus charlestoni*) and over-exploited, in the case of coastal species such as green spiny lobster (*Panulirus regius*) brown spiny lobster (*Panulirus echinatus*) and Mediterranean slipper lobster (*Scyllarides latus*).

Artisanal fishing is dominant in CV, both in terms of employment and of catches. According to a survey conducted by INDP in 2005, the artisanal sub-sector in CV has been estimated to employ over 3,100 fishermen and close to 400 fish vendors (O. Silva, pers.comm.).[22] These figures indicate a significant reduction in relation to 1999, when close to 4,300 fishermen were recorded (FAO & DFID, 2005; FAO, 2004; GoCV, 2004). The fleet is composed of an estimated 1,036 open-deck boats of length 3-8 m, down from 1,257 in 1999. The rate of motorisation has been kept relatively constant at around 73-74%, with most vessels also using oars or sails as additional means of propulsion.[23] More than one third of all artisanal fishermen and fish vendors are registered in the island of ST, where more than half of the country's population resides. Landings from the artisanal sub-sector are about twice as high as those from industrial and semi-industrial fleets (FAO, 2004).

CV has semi-industrial and industrial fleets of some dimension, dedicated to fisheries of tuna and tuna-like species, small pelagics and deep-water lobster. Together, these fleets are composed of some 140 vessels of varying sizes (8-25 m; 2.5-121 GRT[24]) and engine power (40-510 HP), employing an estimated 840 people, up from approximately 600 at the turn of the millennium (FAO & DFID, 2005; Almeida *et al.*, 2003; Fonseca, 2000). The tuna fleet operates different fishing gears according to season, including not only long-lines and pole-and-line for tunas – primarily skipjack (*Katsuwonus pelamis*) and yellowfin (*Thunnus albacares*) - but also hand-held lines for demersals, purse seines for small pelagics and traps for deep-water lobster. The lobster fleet is smaller in size – four vessels in the early 2000s – and is composed of larger 15-22 m vessels that, during the period December-June target primarily the endemic muddy spiny lobster (Almeida *et al.*, 2003). A third segment segment of the semi-industrial and industrial fleets has been proposed by Almeida *et al.* (2003), comprising about 70 vessels of length greater than 6.5 m operating purse seines to catch small pelagic species such as

[22] Osvaldina Silva, INDP, personal communication on 6 Apr. 2010.

[23] Moderate to strong winds being an almost constant element of Cape Verdean weather, one would expect to see most fishing boats equipped with sails. This is, however, not the case, and only a minority of fishing communities actually employs sails, and this primarily for historical and cultural reasons.

[24] Gross Registered Tonnage

mackerel scad, round scad and big-eye scad (*Selar crumenophthalmus*). Catches from industrial and semi-industrial fleets are primarily for export and for Cape Verdean processing industries (Fonseca, 2000), although small pelagics are also consumed locally (Almeida *et al.*, 2003). They are concentrated in the islands of ST, SV and SL, and to a lesser extent in SN and SA, because of available landing, storage and processing facilities.

Five main artisanal fisheries have been identified in CV (Table 1). Most of them take place on all islands, and its is common that fishermen travel to other islands to fish, pending weather conditions and vessel characteristics. In particular, the two areas of extended insular shelf described previously congregate fishermen from different, often distant islands.

Description	Targeted species	Dimension
Divers from small boats, at depths up to 25m, both free diving and SCUBA diving (illegal); may include gillnets and traps for lobsters and mollusks	Coastal lobster, mollusks, demersal fish species and cephalopods	Unknown
Beach seines, trawling and seining to beach	Small pelagic fish species	50 units (1999)
Gillnets for surface fishing, from boats; concentrated in Santiago (82%), S. Vicente and S. Antão	Small pelagic fish species (Blackspot picarel (*S. melanurus*) ca. 85%)	Unknown
Purse seines for surface fishing; medium-sized boats (9-10 m) with out-board motors	Small pelagic fish species	24 units
Hand lines for surface and bottom fishing; small and medium-sized boats (3-9 m) with out-board motors.	Tunas and tuna-like species and demersal fish species, alternatively	1,229 boats

Table 1 - Main types of artisanal fisheries in Cape Verde, including targeted species and estimated size
(Adapted from Almeida *et al.* [2003])

The organisation of the artisanal sub-sector in CV shares a number of commonalities with the Santomean one. Capture activities are predominantly male – with the notable exception of the fishing community in Porto Rincão, ST, where women are both fishermen and vendors – while women engage in post-capture processing and commercialisation, again in an utterly autonomous manner. Important fish markets include those of Praia, ST and Mindelo, SV, as well as the tourism island of Sal. Fish products being an important part of the diet of most Cape-Verdeans, catches are also sold in all fishing communities along the coast, as well as in town further inland. As in STP, most fish is sold and consumed fresh, salting and smoking being the two most common artisanal processing techniques. The larger fish canning plants based in SV, SN and ST are supplied primarily by the Cape Verdean semi-industrial and industrial fleets, although some of the supply is imported. Following the 1999-2003 embargo of fish exports to the European market, CV has seen significant improvements to its fish

storage and processing facilities. Exports have since been resumed, to the extent that in 2009 fresh and canned fish products topped the list of Cape Verdean exports, accounting, respectively, for 39.9% and 29.8% in value of all exports (worth 10.6 and 7.9 million Euros, respectively; Instituto Nacional de Estatística [INE-CV], 2010). Ice production plants exist in several fishing ports.

At the top of the state hierarchy in the sector one finds the fisheries ministry, followed by the Directorate-General for Fisheries (DGP-CV, *Direcção Geral das Pescas, Cabo Verde)*. An autonomous state body, the INDP carries out scientific work, as well as development initiatives in the sector, the latter targeting predominantly small-scale fisheries. A development fund has also been established in 1994 to provide credit for private investments in the sector. Fishing associations, often including both artisanal fishermen and vendors, have been rising both in number and importance during the past decade. With the assistance of the INDP, NGOs and occasionally the DGP-CV, they have been instrumental in fostering development in fishing communities, not only in relation to fishing activities, but also to other societal needs. The association of fisheries shipowners, based in Mindelo, represents the interests of the industrial and semi-industrial fleets. Numerous environment and development NGOs operate locally in fishing communities.

4.2 The Management of Fishery Resources in Cape-Verde

Since 2005 the actions by the Cape Verdean government in respect of the fisheries sector are guided by the so-called Fishery Resources Management Plan (PGRP, *Plano de Gestão dos Recursos da Pesca*; Almeida *et al.*, 2003). This document is concerned with the management of the country's fishery resources in view of attaining socio-economic development objectives set out in other government strategy documents.

The PGRP is explicitly grounded on a concern for the status of fishery resources. The rationale is that sound resources are indispensable for achieving any other objective related to fishing activities. According to this premise, three sequential domains of intervention are established: i) knowledge about the status and evolution of resources; ii) systems for managing and developing fishing activities; and iii) an efficient fisheries administration with adequate monitoring, surveillance and evaluation capacity. By ensuring adequate management of fishery resources, the ambition of the PGRP is that Cape Verdean fisheries increasingly contribute to

expanding GNP, reducing the external trade deficit, enhancing food security and the quality of food products, and generating employment opportunities.

The unit of management proposed in the plan are the individual fisheries that exist in CV. These comprise the three industrial and five artisanal fisheries described above, to which the authors added foreign and recreational fisheries[25]. For each fishery an assessment of the main problems is conducted. The authors also refer to three main problems that affect all domestic commercial fisheries, namely i) inadequate transport services and infrastructure for bringing fish from landing sites either to export centres or to domestic markets; ii) insufficient infrastructure at landing sites for conservation and storage of fish, and for ice production; and iii) inadequacy of sanitary conditions, both on board and in port, to comply with both domestic and foreign food safety regulations, which affects overall quality of fish products and restricts acceptability in foreign markets.

These generic problems have largely been resolved since the plan was first drafted (2002-2003), to a large extent motivated by the imperative of overcoming the embargo imposed by the EU in 1999 on fishery products from CV. Transport infrastructure, especially on land, has been and continues to be upgraded, and ice production units are now operational in all major fishing ports. An area where betterments have been slower in coming is the renewal of fishing vessels, the main reason for this being the poor financial capacity of most vessel owners. Recognising this problem, the authors of the PGRP maintain that one of its underlying causes is the refusal of commercial banks to grant credit to fishermen. This situation has its roots on a past history of repeated default on credits, which up to this day feeds a generalised mistrust by private creditors in relation to the sector (Almeida *et al.*, 2003; E. Carvalho, pers.comm.; N. Atanásio, pers.comm.).[26]

As mentioned in the preceding section, the industrial tuna fleet is of particular relevance for the domestic fish processing industry and for exports. There is considerable uncertainty regarding the status of the stocks that this fishery depends upon (International Commission for the Conservation of Atlantic Tuna [ICCAT], 2010), although in Cape Verdean waters Almeida and co-authors (2003) maintain that current exploitation falls below the estimated exploitable

[25] Recreational fisheries, because of their very limited socio-economic and ecological relevance will not be discussed in this document. This activity, which takes place mainly in association with tourism operations, is poorly studied in CV.

[26] Edelmira Carvalho, personal communication, n.21; Nelson Atanásio, Association of Fishing Vessel Owners, personal communication on 8 January 2010, Mindelo, SV.

potential.[27] Monitoring of fishing activities and associated stocks is generally inadequate, and largely non-existent in the case of foreign fleets (E. Carvalho, pers.comm.).[28] The fleet is for the most part composed of old vessels – over 25 years of age – with low efficiency and high operational costs. The respective shipowners have limited capital to invest in fleet renewal, a condition further compounded by high levels of indebtedness. On the commercial side, there appears to exist a persistent difficulty in selling fish to local processing plants at attractive prices (Almeida *et al.*, 2003). Indeed, the occasional use of imported fish by these plants is frowned upon by Cape Verdean fishermen who accuse them of not supporting the domestic fleet (Oceanic Dévelopment *et al.*, 2004a; N. Atanásio, pers.comm.).[29] The upswing of fish exports in recent years is believed to have improved the economic prospects for this fleet.

Specific resource management measures have, until recently, exclusively addressed minimum sizes for yellowfin and big-eye tuna – as per ICCAT recommendations – and data collection efforts relative to the targeted species. In the latest biannual executive plan, however, these measures have been abandoned (Resolution of the Council of Ministers [RCM] no.10/2009). In line with assumptions of stock under-exploitation and the intention of increasing the contribution of this fishery to national income, this plan recommends a careful expansion of fishing efforts based on control of fishing licenses. Other than these specific measures, the PGRP proposes that i) the efficiency-deficit of the fleet be reduced by training and capacity-building of fishermen, and by the promotion of improved fishing gear and better fish conservation methods; ii) fleet modernisation be facilitated by the establishment of shipowner associations through which resources can be pooled, as well as, once again, by capacity-building of shipowners in matters related to management and finance; and that iii) commercialisation be improved through diversification of processing facilities and public consumption of fish, as well as through revision of sanitary conditions at facilities used for fish exports. The extent to which these measures have been implemented is impossible to assess in detail, as no evaluation of the PGRP has yet been conducted (E. Carvalho, pers.comm.).[30] However, the success in the recovery of fish exports since 2003 suggests that the latter measure has largely been successful.

[27] A similar view is held by the president of the association of fishing vessel owners, who is of the opinion that there is no shortage of fish, even in the context of having to compete for the same resource with more efficient foreign fleets (Nelson Atanásio, personal communication, n.26).

[28] Edelmira Carvalho, personal communication, n.21.

[29] Nelson Atanásio, personal communication, n.26.

[30] Edelmira Carvalho, DGP-CV, personal communication on 6 October 2010.

Fleet efficiency and modernisation have probably not changed much, as no new industrial vessels have entered into service. The same is true of the financial status of operators, with continuing high levels of indebtedness and commercial creditors still reluctant to lend money to vessel owners. The state-owned fisheries development fund is largely non-operational at present, as it awaits the implementation of new regulations that will render its functions closer to those of a commercial bank.

The semi-industrial seine fishery targets small pelagic species used mainly as bait in both domestic and, through exports, foreign tuna fisheries. A smaller portion of the catch is sold for human consumption, thereby also playing an important role in ensuring domestic food security.[31] The evolution of this fishery has thus followed that of those tuna fisheries, as well as developments in foreign markets. This fishery has an annual production similar to that of the domestic industrial tuna fishery (Almeida *et al.*, 2003).

Almeida and co-authors (2003) highlight the high proportion of unlicensed vessels operating in this fishery – 80% by the turn of the millennium. As is the case with other fleet segments, vessel owners typically face severe capital constraints, leading to a poorly maintained and inefficient fleet. Difficulties in commercialisation of fish in domestic markets are also felt in this fishery. As alluded to above, problems related to exports and inadequate infrastructure and equipment on shore have largely been addressed in the years since the PGRP was published.

The original set of measures contained in the PGRP did not address resource conservation, a concern that only permeated the subsequent executive plans with the introduction of increasingly strict measures relative to minimum sizes for some species and to closed seasons and areas. Management measures that have been kept since approval of the PGRP include the 'careful expansion of fishing effort' through the control of licenses – which may be regarded with surprise, given the very significant proportion of unlicensed activity in this fishery – and the granting of exclusiveness to this fishery to Cape Verdean nationals. This latter protectionist measure is common to all fisheries except for industrial tuna fisheries, where licenses may be granted to foreign vessels subject to agreements between CV and foreign states.

[31] Almeida and co-authors (2003) label this fishery 'industrial', as most of the catch is used in industrial processes. However, the fleet itself includes vessels as small as 6.5m, which hardly classify as industrial units. This and the fact that some of the fish is used for human consumption justifies the classification as 'semi-industrial' used in this discussion. Other authors share this view and do not include seine fishery of small pelagics in the industrial fisheries segment (Fonseca, 2000; Oceanic Développement *et al.*, 2004b).

The last of CV's industrial fisheries is the lobster fishery using traps. This is a relatively small fishery both in terms of fleet size and catches – only four vessels of length 15-22 m, and yearly catches in the range 30-40 tons – but with a disproportionately high economic importance – its exports are worth 5-10% of CV's total exports in value. It is also the only fishery threatened by overfishing, as mentioned earlier. This is a consequence of the high average value of catches, inadequate monitoring and, at least in the past, of gaps in the knowledge about the ecology of the key species, the muddy spiny lobster (Almeida *et al.*, 2003). Earlier conservation and management decisions were thus taken in a context of considerable uncertainty. It is not known to this author how well these gaps have been addressed in recent years.

The proposed resource conservation measures have not changed much between the executive plans of the PGRP: a closed season is maintained between July and November, and a minimum size has been established – 24 cm in the original PGRP and in the 2005-2006 plan, and 11 cm thereafter – to which a limitation in the number of traps per vessel has been added in the two last plans (RCM no. 3/2005; 11/2007; 10/2009). These conservation measures add to the management measure of granting a maximum of four licenses exclusively to Cape Verdean shipowners.

Improvements to shore-based storage and commercialisation equipment have benefited this fishery, dependent as it is on foreign and domestic tourism markets. The old age and limited efficiency of the fleet, have not changed in recent years. Indeed, the call by Almeida and co-authors (2003) for implementation of a project for fleet renewal has not yet materialised. The same is probably true of alleged illegal capture of lobsters by foreign vessels given the continued inability of Cape Verdean authorities in effectively patrolling the country's fishing zones (A. Monteiro, pers.comm.).[32]

The five artisanal fisheries active in CV typically coexist in many of CV's fishing communities, with fishermen shifting between them depending on season, resource availability and employment opportunities. Many of the problems faced by artisanal fisheries are common to several of them – indeed, as discussed at the beginning of this section, some of the more structural problems also extend to the industrial and semi-industrial segments – as displayed in Table 2. The most important measures proposed for each artisanal fishery are also included in the table.

[32] António Monteiro, Coast Guard, personal communication on 12 January 2010, Praia, ST.

Fishery	Main problems	Proposed measures
Hand lines (demersals & small tuna)	- Signs of overexploitation in certain areas, forcing fishermen to sail to distant fishing grounds - Insufficient monitoring of fishing activities and of fish stocks - Under-exploitation of tuna resources due to limitations in vessels, fishing gears and navigation equipment - Inadequate safety and navigation equipment on board - Occasional scarcity of equipments for replacements and maintenance - Frequent conflicts with other gears and with semi-industrial bait fishery - Limited financial resources of fishermen, and in particular very low incomes for the smallest vessels (3-5 m)[33] - Low levels of organisation among fishermen[34]	- Conservation: minimum catch sizes for yellowfin and big-eye tuna of 3.2 kg (revoked in 2007) - Management: 3 nm belt around each island reserved for artisanal fisheries (after 2009 semi-industrial seiners may also catch small pelagics inside this zone) - Operations: Awareness raising in regards to the use of safety equipment, accompanied by stricter enforcement; Introduction of larger, safer vessels; Training relative to technical and financial management of fishing activities, as well as in operation and maintenance of shore-based equipments
Purse seines (small pelagics)	- Insufficient monitoring of fishing activities and of fish stocks - Inadequate safety equipment on board - Occasional scarcity of equipments for replacements and maintenance - Limited financial resources of fishermen - Low levels of organisation among fishermen	- Conservation: minimum sizes, closed seasons and areas for mackerel scad after 2008 (same measures as for semi-industrial seine fishery); minimum size for big-eye scad after 2009; - Management: careful expansion of fishing effort with control of fishing licenses; 3nm artisanal fisheries exclusive zone (see above) - Operations: see above
Gill nets (smal pelagics)	- Insufficient monitoring of fishing activities and of fish stocks - Illegal use of SCUBA to find fish - Occasional scarcity of equipments for replacements and maintenance - Occasional oversupply of fish leading to excessively low prices and waste where adequate storage is not available - Limited financial resources of fishermen - Low levels of organisation among fishermen	- Conservation: since 2007, minimum size for the main targeted species (blackspot picarel, *Spicara melanurus*) and minimum mesh size - Management: since 2005, careful expansion of fishing effort with control of fishing licenses; generic expansion of research and monitoring efforts in support of stock management

[33] Celestino Oliveira, S. Pedro Fisheries Association (*Associação Nova Geração de Pescadores de S. Pedro*), personal communication on 8 January 2010, S. Pedro, SV.

[34] At local level, however, progress has been made in recent years in the establishment of fisherman associations and cooperatives. See below.

Fishery	Main problems	Proposed measures
Beach seines (small pelagics)	- Insufficient monitoring of fishing activities and of fish stocks - Suspected negative impact on juvenile fish because of too small mesh sizes - Frequent conflicts with semi-industrial bait fishery	- Conservation: minimum size of fish caught for bait - Management: Limitation of the number of seines in operation, after 2007 to 41 units; generic expansion of research efforts to describe ecological and socio-economic characteristics of this fishery
Divers (crustaceans, cephalopods, small pelagics, demersals)	- Insufficient monitoring of fishing activities and of fish stocks - Illegal use of SCUBA leading to increasing fishing effort - Suspected overexploitation of coastal lobsters and sea snail *Strombus latus* (locally known as *'búzio cabra'*) - Occasional accidents and premature health deterioration among SCUBA divers	- Conservation: since 2005, in relation to coastal lobsters, closed season May-October, minimum size, prohibition of catching egged females, prohibition of use of gillnets; prohibition of the use of trawls to catch *S. latus* - Management: prohibition of the use of SCUBA; generic improvement of monitoring and in particular enforcement of regulatios - Operations: programme for conversion of SCUBA divers to other forms of fishing, so as to phase out dive fishing

Table 2 - Main problems of and proposed measures for Cape Verdean artisanal fisheries
(Adapted from Almeida *et al.* [2003] and RCM nos. 3/2005; 11/2007; 10/2009)

In regards to foreign fleets operating in CV, suffice it to mention here that the financial counterpart paid by the EC – worth approximately 0.5 million Euros annually since the early 1990s – has been instrumental for the financing of the Cape Verdean fisheries administration, as well as for improvements to the sector's infrastructures. However, the operations of European fleets remain largely unreported to Cape Verdean authorities, something that continues to feed the two main sources of discontent against the agreements. The first is the accusation – mainly by artisanal fishermen – that foreign vessels frequently operate within the 12 nm of the territorial sea, reserved, by the agreement, for national vessels.[35] The second is the perception shared across the fisheries sector, that the agreements are not beneficial to the country because nobody really knows how much fish is actually been caught. With the current protocol to the 2006 fisheries partnership agreement coming to its end in 2011, it will be interesting to see how the Cape Verdean government will negotiate its prorogation.

Further to the measures discussed so far and which constitute the bulk of CV's fisheries policy, there are four other initiatives deserving mention for their relevance to the well-being of professionals in this sector.

The initiative that has been running the longest – since the early 2000s – is the provision of support to the establishment of fishing cooperatives and associations. With technical and material assistance from the INDP, DGP-CV and NGOs, 26 such entities have so far been established on all nine islands. The purpose of these associations is to act as self-help institutions through which local and external resources are mobilised to address fishing-related problems and improving the lives of community members. In particular, associations carry out small-scale initiatives in the communities based on direct engagement of its members and serve to attract funds to the community that its member would not be able to access individually.[36] This has enabled the purchase of fishing gear, safety equipment and vessel engines. Associations have also been used for fishermen to gain access to credit in support of

[35] This accusation is countered by some Cape Verdean nationals themselves: the president of the industrial fleet association argues that all important tuna fishing grounds are located well beyond the 12 nm, hence there is no reason to look for tuna close to shore (N. Atanásio, pers.comm., n.29). Celeste Benchimol, head of WWF Cape Verde, maintained that tuna vessels operate close to shore with the exclusive aim of catching bait for the tuna fishery (personal communication on 14 January 2010, Praia, ST). This is an illegal activity, not only because Cape Verdean law reserves fisheries for bait to Cape Verdean nationals, but also because fishing for live bait and fishing within 12 nm from the baselines has been excluded from the latest fisheries agreement, in force since 2006.

[36] Some of these associations and cooperatives have been created under the National Programme for Combating Poverty with precisely this aim. They bear responsibility for the development and implementation of local-level poverty reduction initiatives sponsored by government-managed funds (see below).

investments – such as boat acquisitions (C. Oliveira, pers.comm.; P. Varela, pers.comm.)[37] - as well as credit-granting institutions themselves (P. Varela, pers.comm.; J. Tavares *et al.*, pers.comm.).[38] Associations are also means through which fishermen and vendors take part in negotiations with external entities, such as government. Regrettably, no assessment has yet been conducted on the actual impact that these institutions have had on well-being.

The second initiative is the establishment of first-sale fish auction sites, soon to be pilot-tested in the country's two main fishing ports – Praia and Mindelo.[39] The aim is to formalise fish sales, while at the same time enabling additional monitoring of fish landings. The former aim will allow fishermen and fish vendors easier access to credit, based on the record of earnings from official sales. These records will also be the basis for social security discounts by fishermen and vendors. As will be discussed below, lack of social protection has been a recurrent problem in Cape Verdean fisheries.

The system is modelled on the Portuguese one, with two important changes. The first is that, in order to account for the largely informal nature of artisanal fisheries in CV, sales at the auction will be voluntary, at least in the beginning. This will allow a gradual transition to the new formal system and, more importantly, enable fishermen and vendors to assess the usefulness of the system. The second change is that minimum prices will be set for fish sold at the auctions, protecting fishermen from selling at a loss.[40] Minimum prices shall be defined jointly by the state and representatives of fishermen.

The third initiative is not exclusive to fisheries, having to do with the recent expansion of the social security regime to include self-employed individuals in informal occupations. These

[37] Celestino Oliveira, personal communication, n.33; Paulo Varela, Tarrafal Fisheries Association, personal communication on 13 January 2010, Tarrafal, ST.

[38] P. Varela, personal communication, Ibid.; Joaquim Tavares, Anilsa Jesus, Maria do Socorro & Augusta Pereira, Calheta Fisheries Association (*Associação de Pescadores e Peixeiras da Calheta-S. Miguel*), personal communication on 13 January 2010, Calheta (S. Miguel), ST.
The understanding of the author is that in these cases associations operate more as credit-intermediaries than as actual creditors, in the sense that they manage credit sales to their associates of fishing equipment that the association has received from external organisations. It is not the case that associations grant credit from their own assets, and indeed most of them do not have the resources to do that, at least not on a larger scale. The presidents of the associations of S. Pedro, SV (C. Oliveira, n.33) and Tarrafal, ST (P. Varela, n.37), however, referred to the intention of the respective associations of purchasing and operating a semi-industrial vessel that could generate employment for your fishermen and income for the association, thereby opening the door the it to act as a creditor itself in the future.

[39] This discussion draws largely from an interview with José Lopes Veiga, consultant at INDP, on 8 January 2010, in Mindelo, SV. A feasibility study on the establishment of the auction system has been conducted, but the author has not been given access to it.

[40] Fish auctions typically operate by sequentially descending prices. Without lower limits the possibility exists of fish being sold for nothing.

typically to not have any evidence of the respective earnings and have so far been left out of social security schemes. The immediate consequence has been that, in cases of illness, injury and old age, fisheries professionals have had to rely either on family and friends, or on the minimum social pension worth 5,000 CV Escudos - roughly 44 Euros - per month (J. Tavares *et al.*, pers.comm.; C. Oliveira, pers.comm.).[41]

The simple fact that a social security regime has been put in place does not imply that fisheries professionals will adhere to it. Among the fishermen and vendors interviewed by the author, the absence of a state pension regime was cited as a source of vulnerability. Edelmira Carvalho, director-general of fisheries notes, though, that earlier attempts to involve fishermen in the design of a more inclusive social security regime faced generalised lack of support from the very beneficiaries themselves. Her understanding is that, generally, fishermen show little concern for the future and adopt an attitude of 'money earned, money spent' (E. Carvalho, pers.comm.).[42] Be it as it may, that the possibility now formally exists for fishermen and vendors to create individual social savings accounts is a positive development in that it constitutes an important tool for reducing economic vulnerability once they cease their activity.

A final initiative currently being implemented is the FAO-sponsored project for the installation of fish aggregating devices (FAD) in five of the archipelago's islands (FAO, 2009b). The project is committed to improve on an earlier initiative where insufficient involvement of local fishermen resulted in inadequate maintenance and ultimately irreversible degradation of the devices (L. Fonseca, pers.comm.).[43] This time fishermen are being involved in the design, construction and placement of the FADs and they will be responsible for their management and maintenance.

[41] Joaquim Tavares *et al.*, personal communication, n.38; Celestino Oliveira, personal communication, n.33.
[42] Edelmira Carvalho, personal communication, n.21.
[43] Luciano Fonseca, FAO, personal communication on 6 January 2010, Praia, ST.

4.3 The Cape Verdean Maritime Sector

An archipelagic state spread over 82,000 sq. km of ocean, CV has historically had to rely on maritime transport for trade and communications between its islands. Today, there are ports in each of the nine inhabited islands of CV. Three of them – Porto Grande in SV, port of Palmeira in SL, and port of Praia, in ST – are international ports, whereas the remaining six are used exclusively for inter-island cabotage. Movement of both cargo and passengers has increased significantly over the past two decades. The number of passengers going though Cape Verdean ports, for example, increased from close to 274,000 in 1995 to over 676,000 in 2006 (Direcção-Geral de Planeamento, Orçamento e Gestão [DGPOG], 2008). Close to half of this amount comes from passenger traffic between the islands of SV and SA, the two islands located closest together. A second cluster of passenger services operates between the *Sotavento* islands of ST, MA, FG and BR, while a third, smaller cluster, includes SL and BV.

Over a decade ago the state withdrew from commercial operation of ships, and all inter-island services are now run by private companies. In those routes where cargo and passenger volumes are insufficient to ensure profitability, the state has entered into public service agreements, covering eventual losses incurred by the operator (DGPOG, 2008; Decree-law 24/2004).[44] It thereby ensures a minimum level of service – which, in the case of passenger transport, is especially important for those who cannot afford airplane tickets – without being directly involved in operations.

Cargo volumes handled at Cape Verdean ports have grown at yearly average rates of 9.5% in the period 1995-2006 (reaching 1.7 million tonnes in 2006), with a higher figure of 10.4% for international cargo (1.1 million tonnes in 2006; DGPOG, 2008). According to the same source, containerised cargo evidenced an even more impressive growth, at over 19% per year in weight, and an almost eightfold increase in the number of units over the same period (reaching 48,321 TEU and 403,901 tonnes in 2006). These figures indicate not only the expansion of CV's economy, but especially its increasing integration in international markets. However, growing cargo handling demands have uncovered the many limitations of Cape Verdean ports, in turn sparking an ambitious programme of expansion and modernisation of port infrastructure and equipment, as well as the reform of port administration, both currently ongoing.

[44] Order no.51/2004 stipulates that the following four routes be subject to public service contracts "until traffic volumes renders them attractive to the private sector": Praia (ST) – S. Filipe (FG); Furna (BR) – S. Filipe; Praia – Porto Inglês (MA); and Praia – Rabil (BV).

ENAPOR is the state company that owns and operates all port in CV. The conversion of the port administration regime to a landlord-port model is currently being prepared, following which ENAPOR will retain ownership of land, infrastructure and some equipment, and transfer all operations to private entities (F. Spencer, pers.comm.).[45] This process, aiming at clearly separating policy-making, regulatory and commercial roles in port operations, is expected to have important consequences for stevedores. Currently it is ENAPOR that maintains a pool of certified stevedores at every port, who are called upon when vessels are loaded or unloaded. On average, stevedores work between 12 and 15 days per month, for a salary of between 45,000 and 50,000 CV Escudos (approximately 400 to 450 Euros). With privatisation, ENAPOR anticipates that private operators will opt for reducing the number of stevedores, estimating that about half of the 140 stevedoring jobs at Porto Grande and of the 300 at the port of Praia will be eliminated (F. Spencer, pers.comm.).[46] ENAPOR has already initiated this reduction.

The Cape Verdean registered fleet consists of approximately 35 vessels, over two thirds of which of less than 1,000 GRT (ENAPOR, 2009). Most vessels are old and in poor conditions (L. Viúla, J. Pires pers.comm.).[47] Indeed, the last new-buildings to enter into service in CV were the vessels operated by the state company in the early 1990s. Since then, Cape Verdean ship-owners have only bought second-hand vessels (Z. Fortes, pers.comm.).[48] This observation reflects the very limited investment capacity of Cape Verdean ship-owners, who, unable to engage in international cargo routes, are stuck in a domestic market too small to sustain large investments in fleet renewal (Z. Fortes; L. Viúla, pers.comm.).[49]

Ship repairs are carried out at the two larger yards currently in operation, both located outside Mindelo, SV. Cabnave is the largest of these, and performs work primarily on larger steel vessels. It is expected to undergo expansion, in part supported by Chinese funds, in order to increase capacity to better serve Korean and Chinese fishing fleets operating in the region. The smaller yard of Onave engages exclusively in building and repairing fishing vessels.[50] Other small privately-owned workshops exist that perform repairs on small craft and motors.

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[45] Franklim Spencer, ENAPOR, personal communication on 7 January 2010, Mindelo, S. Vicente.

[46] *Ibid.*

[47] Luis Viúla, Association of Merchant ship-owners, and João Pires, Association of Cape Verdean Seafarers, personal communication on 8 January 2010, Mindelo, S. Vicente.

[48] Zeferino Fortes, Maritime and Port Institute, personal communication on 7 January 2010, Mindelo, S. Vicente.

[49] Luis Viúla, personal communication, n.47; Zeferino Fortes, personal communication, n.48.

[50] The state owned Onave yard was formally terminated in 2005 or 2006. Since then, authorisation was granted to a number of small private repair workshops who continue performing repairs on fishing vessels.

The overall poor condition of the domestic fleet has, according to the president of the seafarers association, demotivated many Cape Verdeans from pursuing a career at sea (J. Pires, pers.comm.).[51] This view is shared by the president of the shipowners association, who adds that the demise of the state shipping company had profoundly negative consequences for the attractiveness of seafaring careers (L. Viúla, pers.comm.).[52] Decreasing numbers of students at the Cape Verdean nautical college – located in Mindelo, and recently incorporated into the newly-created university of CV – attest to this fact.

An unattractive domestic fleet is not the only justification for the diminishing appeal of seagoing careers, at least not in respect of higher-ranked positions. As in other parts of the world, the salaries offered to bridge crew-members on Cape Verdean vessels are today easily matched by those of shore-based professions (Z. Fortes, pers.comm.).[53] Furthermore, for those who really wish to work at sea, foreign fleets typically offer better conditions and better pay. And, in fact, comparing the estimated total of 5,000 Cape Verdean seafarers (J. Pires, pers.comm.)[54] with the reduced size of the domestic fleet, it becomes clear that a very significant fraction of that total must either be working on shore, or on board foreign vessels. For deck positions, which generally do not require formal nautical training, work on board might still prove attractive, but only because alternatives on land are less and worse remunerated for those lacking formal education. In an attempt to render seafaring more attractive – or, at least, accessible – the state has proposed to cover the 15,000 CVE of the monthly fee to students of the nautical academy. There is, however, some uncertainty as to whether or not this measure is really being implemented.

Surveillance of ocean spaces under Cape Verdean jurisdiction is the shared responsibility of the coast guard and the maritime police. The latter is tasked with controlling nearshore waters, but it currently does not have the means to do so, not even in the two most populated islands. The coast guard is one of the two branches of the Cape Verdean armed forces – the other being the army – and is responsible for the surveillance of the whole of the country's EEZ. However, according to the respective commander-in-chief, its limited material resources do not enable adequate coverage of that vast zone (A. Monteiro, pers.comm.).[55]

[51] João Pires, personal communication, n.47.
[52] Luis Viúla, personal communication, n.47.
[53] Zeferino Fortes, personal communication, n.48.
[54] João Pires, personal communication, n.47.
[55] The coast guard has at its disposal four vessels, of which one under repair, and one Dornier airplane, which underwent a three year-long repair until February 2010. One 50m-long patrol vessel and two helicopters are currently being built. António Monteiro, personal communication, n.32.

4.4 A Strategic Plan for Maritime Transport in CV

In 2008 the government of CV adopted a strategic plan the whole transport sector for the period 2008-2011 (PET, *Plano Estratégico de Transportes*; DGPOG, 2008). Its aim is to develop a transport system in CV that is sustainable, enables territorial cohesion, and ensures that all citizens enjoy, to the largest extent possible, "equal opportunities in access to health, education and well-being" (DGPOG, 2008, p.19). This focus on national cohesion is motivated by the concern with spreading the benefits of increased integration into foreign markets to the largest possible share of the population, in particular those who live furthest away from the centres of socio-economic development. In regards to integration with the exterior, the PET provides for the expansion and upgrading of port and airport services so that CV increasingly participates in international trade routes.

A fundamental principle of the plan is that it should be market-driven and open to private investment in all stages of transport system development. The role of the state is to be confined to planning, regulation and enforcement, as well as to the promotion of research and innovation towards more efficient and environmentally sustainable services. The state is equally responsible for ensuring minimum levels of service in routes where traffic volumes are insufficient to ensure profitable commercial operations.

Within this strategic framework, two fundamental roles are ascribed to the maritime sector: firstly, to be the main gateway for international trade in goods; and secondly, to enable that both goods and passengers move as efficiently as possible between the country's nine islands.. In regards to these roles, the aim of government is to increase the level, quality and efficiency of maritime transport services. With this in mind, and in consonance with the principle of the state withdrawing from commercial operation of transport services, the PET only advocates state involvement in the upgrading of ports and associated infrastructure, as well as in the revision of regulatory and administrative frameworks.

In terms of the plan's international dimension, the focus is on the expansion and modernisation of the international ports of Praia, ST and Palmeira, SL – two projects that are currently being carried out – as well as on improvements to safety and security procedures to ensure conformity with international regulations. To this end, three container scanners have been installed at all three international ports (F. Spencer, pers.comm.[56]; ENAPOR, 2008a) Included

[56] Franklim Spencer, personal communication, n.45.

in the mentioned port works is the construction of multi-modal logistics platforms enabling integration of maritime with road transport.

As is also the case in STP, there are plans to develop a large container transshipment hub in CV, namely in the island of SV, in connection to the existing Porto Grande (ENAPOR, 2008b). Similar to the Santomean project, the aim is to serve as the main point of call in West Africa for large ocean-going lines engaged in inter-continental voyages and then to distribute cargo via smaller feeder vessels to ports in the continent. The hub will be a purpose-built terminal located on the western end of the Mindelo Bay, built in three phases, with yearly container handling capacities at the end of each phase of 150,000, 450,000 and finally one million TEU, of which 85% will be for transshipment. If fully developed, the terminal will have a one kilometer long berth with a maximum draft of 17 m, capable of simultaneously handling three 3,000 TEU container vessels and an equal number of smaller feeder vessels. Total investment has been estimated at 325 million USD. If and when this project will be implemented is not known.

The development of the domestic transport system is explicitly motivated by the aim of reducing poverty by improving integration in economic activities and access to services for all Cape Verdeans. The proposals contained in the PET relative to domestic maritime transport are comparable to those discussed above for the international ports in that they largely focus on improvements to port infrastructure and services in support of private transport operations. To this end, works have been carried out at the ports of Vale de Cavaleiros (FG) and Furnas (BR), and more recently also on those of Sal Rei (BV) and Porto Novo (SA). In general these works involve expanding wharfs and increasing the respective depth, upgrading passenger terminals and administration buildings, and constructing or improving roll-on roll-off ramps for speedier handling of cargo.

On the administrative side, as was mentioned above and in line with the promotion of private participation in transport operations, it is proposed that ports adopt a landlord port model where the state, through ENAPOR, retains oversight of operations, and responsibility for acquisition and maintenance of infrastructure and equipment, while all commercial operations are transferred to private commercial entities.

The PET is silent about shipping services, presumably because these are believed to fall entirely within the sphere of private operations, and hence are none of the state's business. The

plan does not contain any provisions relating to maritime education and training either. In this regard, as was alluded to above, the government appears to have offered to pay for the tuitions of students of the Cape Verdean nautical academy, but there are doubts as to whether or not this is really happening.

4.5 Coastal Environments and Tourism Development

This section summarises the main environmental values and the current status of CV's coastal zones. It goes on to discuss the importance of these values to the rapidly expanding tourism industry in the country, and some of the key tensions between tourism development and coastal conservation requirements.

Three main types of coastal environments are found in CV: low-lying sandy coasts, in some places with – generally gentle – dunes; rocky shores, ranging from flat reefs to high cliffs; and smaller, enclosed beaches, often found in bays. The first type dominates the easternmost islands of Sal, Boa Vista and Maio, whereas the latter two are found spread out over the remaining six islands. Sea bottoms around the islands are, correspondingly, sandy or rocky. Coral reefs have been established on this latter type of substrate in a small number of sites mainly off the southernmost islands, where waters are less exposed to the cold southward flowing Canary current and are thus warmer. There are, in addition, a small number of coastal lagoons, but because of the aridity of the climate and the almost complete absence of perennial rivers, no extensive coastal wetlands are found in the country.

The seasonality of oceanographic events; the harshness of the climate – in particular the paucity and irregularity of rainfall and the very high evaporation rate; the limited breadth of the insular shelf; and the reduced intertidal zone are factors constraining biological diversity in CV. These constrains are observed more at the level of biomass, and less at the level of species variety. Indeed, both on land and at sea, CV is home to a rich array of different species that combine elements of equatorial, tropical and sub-tropical environments, as well as to a relatively high number of endemic species (Resolution no.3/2000).

Cape Verdean waters are relatively poor in algae, a general characteristic of the NE Atlantic.[57] Green and red algae dominate – respectively phyla Chlorophyta and Rhodophyta – although brown algae, typically found in colder waters, may also be found in the northern islands under greater influence of the Canary current. Four genera of corals are found in CV, namely *Porites*, *Sclerastrea*, *Favia* and *Monastrea*, and most of the species found are endemic. Cephalopods found and caught in CV include cuttlefish (*Sepia officinalis*), various species of coastal and ocean squid and the common octopus, *Octopus vulgaris*. 49 out of 52 species of the gastropod

[57] The ensuing review is based on Resolution no.3/2000 and Ministério do Ambiente, Agricultura e Pescas (MAAP, 2004), except where otherwise noted.

genus *Conus* that inhabit the country's coastal waters are endemic (Benchimol *et al.*, 2009). In general, sea snails are important fishery resources, *Strombus latus* – locally known as '*búzio cabra*', literally 'goat snail' – occupying a prominent role. Crustaceans include the three species of lobster described earlier - of which the endemic muddy spiny lobster is particularly important for Cape Verdean industrial fisheries - and the Mediterranean slipper lobster. Small crabs inhabit both rocky and sandy coasts, and the larger European spider crab (*Maja squinado;* locally known as 'gon-gon') is frequently caught in deep waters in lobster traps. Fish species include, other than the commercially exploited species reviewed earlier, a variety of sharks, including large pelagic – among which blue (*Prionace glauca*), white (*Charcharodon charcharias*) and basking sharks (*Cetorhinus maximus)* (Benchimol *et al.*, 2009) – as well as smaller deep-water species. Marine reptiles comprise five species of sea turtles, all of which are also found in Santomean waters. These, and the respective conservation status according to the IUCN Marine Turtle Specialist Group (http://iucn-mtsg.org) are: *Chelonia mydas* (green turtle; endangered); *Eretmochelys imbricata* (hawksbill turtle; critically endangered); *Dermochelys coriacea* (leatherback turtle; critically endangered); *Lepidochelys olivacea* (olive ridley turtle; vulnerable); and *Caretta caretta* (loggerhead turtle; endangered). In regards to this latter species, Hawkes and co-authors (2006, cited in Benchimol *et al.*, 2009) argue that the population nesting in CV is the most important of West Africa, and one of the world's largest. The archipelago is frequently visited by marine mammals on their migratory routes, examples including blue (*Balaenoptera musculus*) and humpback whales (*Megaptera novaeangliae*), the latter believed to breed in Cape Verdean waters (Jann *et al.*, 2003, cited in Benchimol *et al.*, 2009), as well as several species of dolphins.[58] Finally, marine birds are not found in large numbers in CV, largely because of the scarcity of food. However, the islands play a very important role for a number of migratory species, as well as for species breeding in the archipelago. Two endemic species – the Cape Verde shearwater (*Calonectris edwardsii*, locally known as 'cagarra') and the Raso lark (*Alauda Razae*, locally known as 'calhandra do Ilhéu Raso') are threatened with extinction. Intense hunting - primarily by fishermen from neighbouring islands – and, in the case of the Raso lark predation by cats introduced by humans into the Raso islets, where the species is found are the main threats to these species (MEAF, 2004). Cape Verde shearwaters are said to have been hunted at a rate of seven to eight thousand individuals per year (MEAF, 2004; Benchimol *et al.*, 2009), but recent awareness

[58] It is believed that whales were once so abundant that American whalers used to travel to CV to hunt them. This is turn led to the initial waves of Cape Verdean emigration to the USA.

raising and conservation efforts are believed to have reduced these numbers (Direcção-Geral do Ambiente [DGA], 2009a).

Hunting by humans is also the main threat facing marine turtles in CV, although factors such as entanglement in fishing nets, excessive illumination of nesting beaches at night – which disturbs egg laying – and sand mining in beaches – which destroys nests and nesting sites – have equally been mentioned (Merino *et al.*, 2007; DGA, 2009a). Interestingly, while in the past turtle meat and eggs might have constituted a welcomed source of animal protein, today these animals are hunted primarily for less vital purposes, namely the production of handicrafts from their shells; the collection of the penis of males – believed to have aphrodisiac properties; and, most importantly, for the mere pleasure of hunting (C. Benchimol; J. Rocha; J. Hancock, pers.comm.).[59]

Fish species are threatened primarily by commercial fishing, whereas marine mammals are often caught accidentally. Fishing effort and fish stocks status have been discussed above. As for levels of bycatch, in particular of marine mammals and of sharks, there are no reliable data from CV.

Although the depletion of marine and coastal biodiversity by direct human predation does, in some instances, assume significant proportions – for example, in the cases of lobsters at sea and Cape Verde shearwaters on land – the largest environmental problem facing coastal zones is that of beach erosion caused by unregulated sand mining (DGA, 2009a; GoCV, 2004). The construction boom of the last two decades – largely propelled by tourism developments – justifies the dimension that this activity has acquired, which has led to the reduction in size and in some instances disappearance of sandy beaches in CV. That sand mining often is one of the few income-generating activities available to the poor has rendered the problem particularly difficult to address. However, it frequently is these same poor people who suffer the negative consequences of unregulated mining, in the form of increased coastal erosion, loss of tourist attractions and decline of fishery resources (J. Tavares *et al.*, pers.comm.),[60] as well as of increased saltwater intrusion in coastal lands and aquifers (GoCV, 2004).

Pollution loads in CV's coastal waters are, in general, very small. The level of industrialisation is minimal, such that most of that pollution is from urban sewage and is restricted to the

[59] Celeste Benchimol, personal communication, n.35. Júlio Rocha, Turtle Foundation, personal communication on 11 January 2010, Espargos, SL. Joana Hancock, Turtle Foundation, personal communication on 2 January 2010, Cascais, Portugal.

[60] Joaquim Tavares et. al., personal communication, n.38.

immediate vicinity of coastal settlements. At present, only the cities of Praia, ST and Mindelo, SV are served by wastewater treatment facilities, and even there a large fraction of the population is not connected to the municipal sewage system – between 80% and 85% in the former and around 70% in the latter (own estimations based on DGA, 2009a). Ports and ships are also potential sources of localised marine pollution, as are the two shipyards in Mindelo. No detailed studies exist on the extent of these two phenomena.

A more visible type of pollution is litter. The establishment of dedicated dump sites on all islands is very recent (DGA, 2009a), and evidence of decades of freely dumping litter on any possible ground is pervasive both in- and outside of human settlements.[61] Coastal lands and waters have not been spared.

A final environmental concern is that of coastal habitat destruction. This has affected all islands, given that most human settlements are located at or near the coast. The largest coastal infrastructures are found in the islands of ST and SV – primarily in the form of urban housing, ports and minor industrial facilities, in and around the cities of Praia and Mindelo – in SL and, increasingly, BV, in the form of densely packed large tourism buildings. The proposed container hub in Mindelo, if ever constructed, will involve a profound alteration of the whole Mindelo Bay. However, although infrastructure developments such as these do alter coastal morphology and processes severely, it is fair to state that, on the whole, CV's coastal areas remain largely unchanged by humans.

That tourism has had a profound effect on some stretches of CV's coastal zone has mainly to do with the type of tourism product that the country has so far offered. Because of its relevance, this sector is briefly reviewed here.

In a study largely dedicated to highlighting the benefits of the tourism sector for CV, Jonathan Mitchell (2008, p.36) states the following: "The Sal model of tourism development is widely regarded in Cape Verde as a mistake."[62] Understanding what this 'Sal model' is about, and what its relevance for the country has been goes a long way in describing the key elements of that sector.

[61] Over one in every four Cape Verdeans dumps his solid wastes in the nature or in the surroundings of the house. In rural areas this percentage rises to close to 60% (INE-CV, 2009).

[62] Similar views were shared by Cape Verdeans interviewed by the author: Celeste Benchimol, personal communication, n.35; Júlio Rocha, personal communication, n.59; Antero Alfama and Euclides Monteiro, Sal Municipality, personal communications on 11 January 2010, Espargos, SL.

The island of Sal is both the birthplace and the centre of gravity of CV's modern tourism industry. Until 2005 it was also the home to the only international airport on the archipelago (Direcção-Geral do Turismo [DGT], 2009).[63] This fact led to the first foreign-owned tourism infrastructure having appeared on this island back in 1967, with subsequent expansion largely propelled by South African Airways crews stopping over on their flights to Europe and USA. 1986 saw the establishment of the state-owned Belorizonte Hotel, which would serve as the first training site for tourism professionals in the country. However, it was the progressive economic liberalisation of the 1990s that would enable a veritable boom of foreign investment in tourism infrastructure, to the extent that, in 2008, SL alone – which is only the country's fifth largest in terms of population, at 19,500 – accounted for over half of the country's tourist beds and for close to three quarters of all tourist stays (DGT, 2009).[64] A sign of the remarkable concentration of Cape Verdean tourism, the small town of Santa Maria accounts for over 80% of SL's tourist rooms (Mitchell, 2008).

The impressive growth in the number of tourists – on average 11.4% per annum between 2000 and 2008 (DGT, 2009) – has not been matched by the diversification of tourism products, and CV tourism is dominated by a 'sun and sand' model for the masses, based on medium- and large-sized hotels and privately-owned resorts close to the sea, and offering little else than the experience of Cape Verdean sandy beaches under the tropical sun. This is Mitchell's 'Sal model', which so far has attracted primarily visitors from Europe, often on all-inclusive packages, who, for their most part, confine themselves to the hotel and neighbouring beaches. This is the model that has enabled a transformation of the Cape Verdean economy, that led the tourism sector to contribute with over 20% to the national income, and that attracts an estimated 95% of all foreign direct investment. Equally, this is the model that provides some 9,200 jobs in the travel and tourism sectors and 18,000 jobs in tourism-associated construction (Mitchell, 2008).

However, this is also the model that has evolved in a largely unregulated manner, responding to society's and government's urge to increase earnings, attract foreign investment and create employment opportunities. Moreover, with most land use planning instruments still not in place or insufficiently enforced, tourism development has been poorly planned.[65] As mentioned

[63] Four other international airports have since been inaugurated: Praia, ST, in 2005; BV in 2007; and São Pedro, SV in 2009.

[64] Respectively, 5,838 out of 11,420 beds, and 1,347,076 out of 1,827,196 stays. The island received that same year over 190,000 tourists, that is close to ten times its resident population.

[65] Some examples of failures in coastal zone management and planning: as of January 2010, the municipal

earlier, it has resulted in profound alterations to stretches of the coastline and in a series of social problems, among which an increase in petty theft and prostitution, including of children; expansion of shanty towns with inadequate housing conditions; illegal immigration and accompanying unregulated and sub-standard labour; as well as social segregation of local inhabitants, especially the poor (DGT, 2009; Mitchell, 2008; A. Alfama, pers.comm.; E. Monteiro, pers.comm.).[66]

From an environmental perspective, an increasing problem of the past two decades has been the inability of government to resolve conflicting claims on coastal environments. The case of the Murdeira Bay marine reserve serves to illustrate this point. Having been the focus of some of the earliest marine conservation efforts in the country – largely because of its importance as a breeding site for fish and turtles, and of its coral assemblages – the reserve was formally established in 2003, together with the country's other protected areas. However, a project was later approved for the construction of a marina inside the reserve, potentially jeopardising the conservation objectives set for the area. Both processes, albeit conflicting, were approved by the central government, who so far has not been able to disentangle the issue. At present, both developments have been put on hold until a court rules on whether or not the marina should be built and included in the reserve (C. Benchimol, pers.comm.).[67]

The recognition of these less virtuous aspects of the 'Sal model' justifies the quoted statement by Mitchell. However, in spite of this recognition, developments in the last few years seem to perpetuate this model. These are taking place on a large scale in BV – again, a low-lying, arid, sparsely populated island with extensive white sandy beaches – which, in less than five years, has become second only to SL in terms of tourist accommodations. Although a more careful development and planning approach is being attempted there (see Mitchell, 2008), in the past few years a small number of very large hotels were built in BV, an island with very little own infrastructure.[68] Concerns have been raised that BV will go down the same path as Sal (J. Rocha, pers.comm.; E. Monteiro, pers.comm.).[69]

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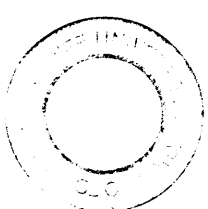
master plan of Sal had not yet been approved (A. Alfama, pers.comm, n.62), none of the country's coastal conservation areas had a zoning or a management plan (C. Benchimol, pers.comm., n.35; DGA, 2009a); there was nothing like a coastal zone management plan (Lima & Martins, 2009; Liza Lima, Directorate-General for Environment, personal communication on 5 January 2010, Praia, ST); and the maritime and port institute often fails to enforce the statutory coastal setback lines as per the regulation on the public maritime domain, especially when these clash with investment projects (E. Monteiro, pers.comm., n.62).

[66] Antero Alfama & Euclides Monteiro, personal communications, n.62.

[67] Celeste Benchimol, personal communication, n.35.

[68] As of late 2009, there was not a single pharmacy in the whole of BV (DGT, 2009).

[69] Júlio Rocha, personal communication, n.59; Euclides Monteiro, personal communication, n.62.



It should, nonetheless, be mentioned that government is working towards the strengthening of land use planning instruments. In addition, the state society responsible for tourism development in Boavista and Maio (*Sociedade para o Desenvolvimento do Turismo das Ilhas da Boa Vista e do Maio*) has elaborated special plans for some of the so-called 'integrated tourism development zones' on these two islands, meant to steer and control the respective development. It is too early to know whether or not these instruments will effectively lead to better planning of tourism infrastructure, to more controlled tourism developments and to increased participation of the public in decisions affecting occupation and use of coastal zones.

Finally, it is worth referring to some conclusions by Mitchell (2008) and Cabral (2005) regarding the benefits to poor people from tourism in CV. As noted earlier, tourism in this country is highly concentrated in SL and BV, followed by ST and SV. These are the four islands with the least incidence of poverty, suggesting that tourism is not taking place where the poor live. Moreover, even where tourism does take place, local supply chains are in general so weak that tourism operators seldom procure locally, hence failing to generate significant demand at local level to stimulate productive activities and eventually lead to improvements to the economy of neighbouring communities.[70] However, Mitchell (2008) notes, most operators do use Cape Verdean whole-sale suppliers – even if to acquire imported goods – and thereby contribute to local businesses. To which extent this benefits poor people is not known.

Another avenue for potentially improving the lives of the poor is employment. Here, Mitchell (2008) estimates, a high proportion of the approximately 8,500 Cape Verdeans in non-management positions in tourism are from poor backgrounds. These workers receive an average monthly salary of close to 300 Euros, excluding eventual tips. In addition, the author estimates that 18,000 full-time equivalent jobs had been created in tourism-associated construction.[71] Here again much of the workforce is from poorer backgrounds, with roughly half coming from other West African countries. The economic benefits from jobs in construction should, however, be regarded with caution: labour standards and living conditions for many of these workers are very poor, and temporary work in construction has motivated migration from other islands, potentially disrupting family and social ties. Cabral (2005) does

[70] Antero Alfama, of Sal municipality, argues, contrary to the views of these two authors, that hotels and restaurants in SL are important customers for fishermen in this and neighbouring islands (personal communication, n.65).

[71] This is presumably an average yearly figure. Mitchell's values are from 2007/2008, that is before the financial crisis hit the Cape Verdean tourism sector. It is not known how many jobs were lost as a consequence of this crisis.

not share Mitchell's relatively positive view on tourism employment for the poor. Indeed, he seems to imply that one of the reasons why tourism has not had a lasting contribution to poverty reduction in CV is that it has not generated permanent jobs in rural areas, where the poor are concentrated. This view appears to find support in the facts mentioned above that tourism does not take place where the poor live, and that operators seldom procure locally.[72]

Finally, Mitchell (2008) mentions tourism-associated taxes paid to the state treasury, which, eventually find their way into government-sponsored poverty reduction interventions. Cabral (2005) suggests that one such way consists in the provision of public infrastructure and services. Mitchell puts those tax revenues at 7.8 million Euros per annum, although he does not estimate how much of this amount actually reaches the poor.

4.6 Conserving the Coasts and Expanding Tourism: are Mutual Benefits Possible?

This section discusses existing and planned interventions relative to coastal and marine conservation, and to tourism development in CV. Emphasis is placed on how the relationship between these two domains is conceptualised and explored.

The protection of ocean and coastal environments is achieved through the combination of actions at different levels. The first of these comprises measures aimed at reducing pollution at source or at preventing pollution from reaching those environments. As was discussed above, the implementation of measures of these types – relative, *inter alia*, to domestic sewage, industrial effluents and litter – is currently limited by either inadequate infrastructure – for example, lack of waster-water treatment plants or waste reception facilities in ports – or by insufficient state capacity to enforce environmental legislation. However, as alluded to in the previous section, these are two domains where significant progress has been and continues to be made (see, for example, DGA, 2009a).

[72] Cabral's assessment of the poverty impacts of tourism development in CV is much more negative than Mitchell's. He justifies the claim that tourism has not benefited the poor with the observation that most tourism investment is foreign. While it is true that foreign investment often equates with revenues leaving the country – and CV is no exception in this domain – it is also a fact that domestic investment is not done by poor Cape Verdeans, and the resulting profits do not accrue directly to them. Hence the poor do not stand to directly benefit any more from domestic than from foreign investment in tourism. Similarly, there are no obvious structural reasons why the indirect benefits that eventually accrue to the poor – in terms of jobs or tax revenues used for poverty reduction interventions – should vary significantly with the nationality of the investment.

A second level is that of land use planning. It was noted earlier that insufficiencies at this level are at the root of the most important negative environmental impacts of tourism in CV. This theme will be addressed later, when discussing the tourism development strategy.

The third level is that of setting aside portions of the coast and sea through the establishment of protected areas. These were formally established in CV in 2003 by means of Decree-law 3/2003, with the exception of the St. Luzia Nature Reserve, which had been designated in 1990 (Act 79/III/90), with its legal regime adopted in 2003 (Decree-Law 40/2003). Without attempting an exhaustive analysis of these instruments, it is nonetheless relevant to consider how they address human development needs and how they propose that tourism interacts with conservation areas.

These two aspects have to be understood in the context of the objectives underlying the creation of protected areas in CV, which relate primarily to the protection and restoration of natural habitats and species. Hence use of natural resources for socio-economic development is to be promoted only to the extent that it is compatible with conservation objectives. The types and intensity of permitted uses varies both with the type of protected area – from 'integral reserves', the most restrictive, to 'protected landscapes', the most permissive – and with the different zones within the protected area. In addition, specific permits may be required for certain uses. In practice, because none of the marine protected areas created in 2003 has yet been implemented (DGA, 2009b), it is not possible to ascertain how well this framework actually works for the purpose of safeguarding and even promoting socio-economic development in association with those areas. Because, effectively, these MPAs do not exist, management and use of the respective resources does not follow the provisions of the underlying conservation instruments. The example of the Murdeira Bay MPA given earlier illustrates this point, as does the process of establishing the St. Luzia Marine Reserve, which also depicts some of the difficulties of moving from paper to park in CV's MPAs.

St. Luzia was originally proposed as an integral nature reserve, with a ban on all resource use and extraction within the designated area – which includes the island of St. Luzia and the surrounding waters up to a depth of 200m, with a proposal for including the Raso and Branco islets. However, both these waters and the island itself have historically been exploited by fishing communities from the islands of SV, SA and SN. The imposition of a no-take reserve was thus received with profound discontent and upright disobedience, with the state lacking the capacity to enforce reserve regulations. A proposal was consequently tabled to convert the

reserve to a 'natural park' - more permissive in terms of human use – but this was rejected by the ministry of environment as inadequate for ecosystem protection. As it stands today, some other form of middle ground is being worked upon (C. Benchimol, pers.comm.).[73]

The lack of operationalisation of CV's protected areas in general and MPAs in particular has so far prevented their inclusion in tourism circuits. This is an explicit aim of government, which, in the preamble to Decree-law 3/2003 identified four processes through which those areas should contribute to tourism development: i) closely linking the policy for protected areas with the tourism policy; ii) developing new tourism centres in the vicinity of protected areas; iii) considering tourism-related aspects in the management plans for protected areas; and iv) employing protected areas in the marketing of tourism. So far, synergies between conservation and tourism have been incipient. In the particular case of MPAs, they have been virtually non-existent. Indeed, as the Murdeira Bay case illustrates, conflicts between these two sectors have outnumbered those synergies. In spite of this, because the dominant 'Sal model' is increasingly put in question, and because all tourism in CV depends on the preservation of the country's natural features, it is precisely these potential synergies that the latest tourism strategy tries to bring to the fore. In the discussion that follows, however, it is argued that this attempt is not done in an unequivocal manner.

The planning of tourism development in CV dates back to the early 1990s, with the publication of the first public policy for the sector (Act 21/IV/91).[74] This instrument explicitly assigned tourism a central role in the future socio-economic development of the country. Accordingly, it is concerned predominantly with defining principles and objectives relative to the promotion and facilitation of investment in this sector. Private investment is regarded as the engine of tourism development, with the state merely retaining responsibility for creating a legislative and administrative environment that supports that investment.[75] The purpose clearly was to expand the tourism offer in the country, and to this end the policy also addressed how other sectors were expected to contribute to that expansion. For example, agriculture and fisheries should provide products of high quality at low prices, while the transport sector was expected to develop adequate inter-island connections. In regards to the environment – a theme the

[73] Celeste Benchimol, personal communication, n.35.

[74] Nunes (2009) and Cabral (2005) maintain that, prior to the political reform of 1991, tourism was not a political priority. Post-reform changes were quick and profound.

[75] This resonated with the contents of the national development plans of the early 1990s (Nunes, 2009).

policy is almost silent about – it was merely required from state organs that tourism activities should pay due regard to environmental protection requirements.

Considering the rate of tourism development in CV since this document was adopted, one may argue that the 1991 policy was largely successful. However, it is equally fair to reason that the excessive emphasis on tourism expansion resulted in many of the imbalances that characterise this sector, which in turn justify what Mitchell (2008) referred to as the broad discontent with the 'Sal model'.[76] One of these imbalances is felt at the level of inadequate planning of tourism zones and occupation of coastal areas, as discussed earlier (see DGT, 2009).

Land-use planning is not a new concern in CV. The respective framework act, still in force today, dates back to 1993 (Act 85/IV/93). Prior to the passing of this act, the so-called 'special tourism zones' had been created, through Legislative Decree 2/93 – recently amended by Act 75/VII/2010 - which stipulates that occupation and use of land and associated resources in areas reserved for tourism shall be subject to detailed planning.[77] However, as has been the case with the operationalisation of the country's protected areas, so has the actual implementation of all these planning instruments been problematic (see Tavares, 2007). In regards to the land use act, it has remained largely unregulated – and, hence, non-implementable in several aspects – until recently (DGT, 2009a). Most of the specific urbanisation and land use plans have not yet been approved; for example, as of October 2010, the municipal master plan for the island of SL had not yet been approved,[78] as had none of the higher-level regional plans, the so-called 'regional land-use schemes' (EROT, *Esquema Regional de Ordenamento do Território*).[79]

As for the planning instruments accompanying the 'special tourism zones', as of October 2010, only four had been approved – three in BV and one in MA, all elaborated by the society managing tourism investments in these two islands. The fact that the ZDTI of Santa Maria, SL

[76] Ângela Borges, director of the Cape Verdean union of tourism operators (UNOTUR, *União Nacional de Operadores Turísticos*; personal communication on 11 January 2010, Espargos, SL) is of the opinion that government has so far not explicitly followed a coherent strategy for the sector, and that investors have had too much freedom to do what they please. It is, however, not unreasonable to argue that this *laissez faire* state of affairs largely results from the application of the principles and objectives of the 1991 policy, suggesting that the respective strategy has indeed been purposely followed by government.

[77] There are two categories of 'special tourism zones', namely 'integrated tourism development zones' (ZDTI, *Zona de Desenvolvimento Turístico Integrado*), which are particularly valuable areas set aside for implementation of tourism projects; and 'tourism reserve and protection zones' (ZRPT, *Zona de Reserva e Protecção Turística*), which are buffer zones or areas set aside for future conversion to integrated development zones.

[78] The island of SL is one single municipality, as are the islands of SV, BV, MA and BR

[79] These were available for public consultation and comment at the government building in Praia in the beginning of 2010.

- the epicentre of CV's tourism industry[80] – has, since its establishment in 1994, not had its planning instruments approved attests to the very low priority that the state has so far assigned to the planning of tourism areas.

Indeed, ZDTIs have served less as instruments for proper tourism planning than as sources of contention in Cape Verdean politics. The main reason for this is that, in these zones, decision by the central government relative to land use and tourism investments sometimes clash with the wishes of local municipalities. Occasionally, as the Murdeira Bay MPA case illustrates, ZDTIs also contravene other decisions relative to the same area.

It is a fact that there is an increasingly keen awareness about the need to properly plan for tourism developments, and to do this in a way that safeguards natural ecosystems. However, it is still too early to assess whether or not this heightened awareness, as well as the ongoing efforts towards the implementation of statutory planning and land use instruments will bear fruits in terms of improved patterns of occupation and use of coastal land and resources.

The recently adopted tourism development strategy does little to dissipate this doubt. On the one hand, in the analysis of the tourism potential of each island, focus is frequently placed on the islands' natural attractions, in particular on existing protected areas. The aim of this focus is to diversity tourism products based on natural riches. On a similar vein, in the analysis of constraints to sustainability, one of the problems identified is inadequate land use planning, said to have resulted in "irreversible damage to the environment and landscapes, besides inefficient management and distribution of urban and peri-urban land" (DGT, 2009, p.87).

On the other hand, the tourism strategy on the whole does not propose a significant change to the pattern of tourism development in the country. It explicitly aims at further expanding the sector and improving the quality of products and services. Problems to be overcome are only mentioned in relation to transport infrastructure, fiscal administration, human resources, institutional set-up and legal framework in the sector, as well as to marketing and promotion. It does not address the development of alternatives to the 'sun and sand' model, thereby weakening the already vague suggestion of "promoting and managing protected areas as potential tourism products" (p.116). No proposal is made relative to the improvement of the current land use planning regime applicable to tourism areas. Hence, in relation to the impacts

[80] Cabral (2005, p.143) notes, in this regard, that "to speak of tourism in CV is necessarily to speak of tourism in the island of Sal." Despite the growth in importance of BV in the years since Cabral's study, that statement is still largely valid.

of tourism on coastal and marine environments, there appears to exist a disjunction between, on one hand, the analysis contained in the document and the history of large-scale tourism developments in CV and, on the other, the proposed measures that are expected to lead Cape Verdean tourism to a new stage of development. Consequently, the tourism strategy offers few prospects of triggering the inclusion of coastal conservation areas into tourism activities to any significant extent. This being the case, it is difficult to conceive how nature conservation in CV will constitute a means of promoting socio-economic development and reducing poverty.

4.7 Unyielding poverty?

In less than two generations CV progressed from a colony of secondary importance[81] where people died or fled from because of cyclical famines, to a middle-income country often cited as one of Africa's successes in terms of democratic governance and socio-economic progress. Real average yearly income per capita rose from 19 USD in 1975, to 1,420 USD in 2002 and 2,192 USD in 2007 (Laurent & Furtado, 2008), and this in a country largely devoid of exploitable natural resources, unlike most other cases of fast and sustained economic growth in Sub-Saharan Africa (Bourdet, 2002). This paucity of natural wealth has been such a determinant aspect of CV's development and identity, that it is advisable to begin with an overview of the country's main fragilities.[82]

Silva (N.D., cited in Proença, 2009) summarises these fragilities with three terms: 'peripheral insularity' (*insularidade periférica*), referring to the archipelagic nature of CV, located far from important political or economic centres; 'exiguity' (*exiguidade*), referring to the small size of the country and of its population, implying a minute domestic market and weak productive capacity; and 'sahel-iness' (*sahelidade*), relative to the islands' Sahel-like nature and climate, with scarce and irregular rainfall, moderately high average temperatures and poorly productive soils. Not only these terms summarise CV's geographical vulnerabilities, they also help explain structural ones identified by other authors.

'Saheliness' is at the root of vulnerability to droughts, which in turn compromises agricultural production, characterised in CV by stark fluctuations from year to year (Direcção-Geral do Planeamento [DGP], 2008; GoCV & EC, 2008; Proença, 2009). It is estimated that no more that 10% of soils in CV are suited for cultivation, something that in part results from ancient malpractices in agriculture and from intense deforestation (Brooks, 2006) and which has increasingly led to the exploitation of marginal soils in steep terrains more prone to erosion (Tavares, 2008; Proença, 2009).

[81] Of Portugal's five colonies in Africa, Angola, Mozambique and, to a lesser extent, Guinea-Bissau were clearly the most important ones, not only because they were settlement-colonies with significant white populations, but because of their contribution to the economy of the empire. Cape Verde and São Tomé e Príncipe were small plantation-colonies of marginal and diminishing economic relevance. For an economic analysis of the Portuguese African empire of the 19th and 20th centuries, see Clarence-Smith (1985).

[82] In the last chapter of his book, Espírito Santo (2009) contrasts STP – naturally rich and socio-economically stagnant – with CV – naturally poor and socio-economically dynamic – suggesting that the inhospitality of this latter country's nature is to be thanked for the determination with which, throughout history, its inhabitants battled to build a more prosperous society.

Insufficiency of agricultural production has accompanied CV throughout its history, having led, as alluded to above, to cyclical famines and extended mortality (for specific events see Brooks, 2006 and Évora, 2008), and constituting one of the reasons for mass emigration (Bourdet, 2002). That problem has led to a very large dependency on imported goods – about 80% of all food consumed in CV is imported, as are all fuels (DGP, 2008) – which is another of CV's vulnerabilities, here in respect of fluctuations in global market prices for cereals and oil. Because of the limited economic capacity of the country, a large share of these imports are paid for by foreign donations, which, for example, cover 70% of cereal imports (GoCV & EC, 2008). Dependency on external sources of financing extends to remittances from Cape Verdean emigrants, which, together with foreign aid, account for about one third of the country's annual budget (Laurent & Furtado, 2008; Bourdet, 2002). This high level of reliance of foreign assistance, coupled to CV's high vulnerability profile was one of the reasons holding the upgrading of the country from the category of 'least developed country' (Bourdet, 2002), something that was eventually achieved in January 2008, despite the recognition of those vulnerabilities (GoCV & EC, 2008).

Solutions, however partial, to CV's natural and structural fragilities have been found outside the country. Silva (N.D., cited in Proença, 2009) stresses the exogeneity of past development cycles in CV, which largely followed from developments elsewhere. Two other external sources were mentioned above, namely foreign development aid and emigrant remittances. The post-1990 development paradigm is equally very much oriented towards the exterior, explicitly recognising that it is in greater openness towards international markets that CV's development opportunities lie. However, in this process, a question formulated by Silva (N.D., cited in Proença, 2009, p.42) acquires particular relevance: "If openness is key [...], how does one discover in the islands something with an exchange value of interest for international trade, so that an internal process of economic accumulation may be sustained?" Faced with a very limited natural resource basis, government's answer has been 'services' – in particular in the tourism sector – which today account for close to two thirds of the wealth generated in the country (DGP, 2008).. But, as some authors point out (Laurent & Furtado, 2008; Proença, 2009), CV's pattern of services-based growth is also to be held responsible for the deepening of social disparities in terms of income, housing, access to employment, safety and security.

Until, 2007, when the results of the 2006 quality of life survey (QUIBB, *Questionário Unificado de Indicadores Básicos de Bem-estar*) were released, CV had to live with the

unpleasant and seemingly paradoxical evidence of a high poverty rate that stubbornly refused to yield to the remarkable GDP growth. Despite a GDP yearly growth rate of 6% averaged over the 1990s, the percentage of income-poor rose during that decade from 30% to over 36% (GoCV & EC, 2008).[83] The explanation for this divergence lies mainly in a marked increase in income inequality, with the corresponding Gini index rising from 0.43 to 0.59 during the 1990s, placing CV on par with famously unequal countries like South Africa and Brazil (Proença, 2009). To a large extent, the country's ever increasing wealth has been captured by a reduced number of hands, a pattern for which the services-based growth model has been blamed (Furtado, 2008; Laurent & Furtado, 2008; Proença, 2009). Indeed, with the majority of the poor concentrated in rural areas – rural poverty rates have historically been about twice as high as those in urban areas; with growth in services taking place predominantly in urban and tourism centres; and with the known natural constraints to meaningful agricultural expansion, the poor have largely been left out of that economic expansion. At least until the early 2000s, most of the poor remained poor. Furtado (2008) also notes that insufficient investment in human capital contributed to the poor not being able to acquire the skills that would enable them to find jobs in the services sector, where, in general, higher educational attainments are required.

The mid-2000s appear to have witnessed a change in the evolution of poverty in CV, with the figures from the 2007 QUIBB indicating a 10% reduction of the national rate to 26.6%. Relative to 2001-02, urban poverty was cut almost by half – from 25% to 13,2%, which is even more impressive if one considers the expansion of urban population – whereas rural poverty experienced a meagre reduction of 15% to 44,3% (INE-CV, 2008). This evolution has further polarised poverty between rural and urban areas, with 72% of the poor residing in the former, up from 63% in 2001-02.[84] Difference in poverty incidence exist not only between rural and urban settings, but also – actually, more markedly – between the different islands, with SA – a predominantly agricultural island, and the one with the highest poverty incidence – having a

[83] Proença (2009) notes that if the same methodology had been used in the 1988-89 and 2001-02 population census, the rise in poverty would have been even more pronounced. This author, however, cautions against relying exclusively on one set of measurements, and presents other figures that show a decrease in poverty incidence. For simplicity and because they are the most widely used, the official figures from the INE-CV are used in this discussion.

[84] Baptista (2009) analysed the distribution of poverty incidence in the island of Santiago, showing variations not only between rural and urban areas, but also between different rural areas depending on the respective agricultural potential and on access to markets.

poverty rate that is over ten times higher than that of SL (45.6% against 4.0%; INE-CV, 2009).[85]

None of these breaks – urban vs. rural, island A vs. island B – determines who is or is not poor. Instead, they are mere manifestations of deeper causes of poverty found elsewhere. Under-employment and unemployment have been pointed out as two important ones (GoCV & EC, 2008; Proença, 2009), in turn resulting from the inability of productive sectors to generate sufficient wealth and employment opportunities (DGP, 2008). In agriculture, as well as in fisheries, earnings have traditionally been too low to enable meaningful levels of capital accumulation. These two categories share with those lacking formal education greater difficulties in accessing better paid jobs in the expanding services sector, and hence are among those who most often are poor and remain poor (INE-CV, 2009; Proença, 2009).

Formal education and training are two aspects with a strong correlation to poverty. In CV in particular, access to education, as well as to most other public services, has been hampered by the extreme territorial discontinuity of the country. The state has not had enough resources to provide equivalent levels of services in all parts of the territory, and those regions less well connected to the main centres have suffered from lower service coverage. Hence those areas with higher poverty are also those with worse service provision, and also in this regard the poor are disadvantaged relative to the non-poor. For example, according to the 2007 QUIBB (INE-CV, 2009) the percentage of poor with basic education (4th grade) or less is 74.4%, whereas for the non-poor it is 60.3%; only about one third of the poor are connected to the public water supply grid, against 54.8% for the non-poor, the respective figures for connections to sewerage systems being 26.8% and 67.6%; 43.8% of the poor against 83.6% of the non-poor are connected to the electricity distribution grid; and only one third of the poor enjoy litter collection by the municipality, this being the case for over two thirds of the non-poor.

A positive correlation has also been found between old age and poverty (INE-CV, 2009), although the underlying mechanisms have not been described in detail. It is, nonetheless, not unreasonable to argue that in a country with limited social protection and a meagre old-age pension; with an economy increasingly reliant on skills most older people cannot acquire; and with migration hardly being an option for the elderly to escape poverty, this group does face greater difficulties in attaining an adequate standard of living.

[85] GoCV (N.D.) offers a careful, albeit somewhat outdated, analysis of the poverty situation in each of the archipelago's islands.

Migration, including emigration, which has traditionally been one of the strategies for Cape Verdeans to escape poverty has also had less virtuous consequences for those left behind. Laurent & Furtado (2008) point out that over-reliance on remittances from emigrants, reinforced by demonstrations of opulence by emigrants on the seasonal visits to CV have led to increasing propensity to idleness among residents.[86] The educated youth in particular, unable to find employment[87] and yet increasingly reluctant to engage in hard labour in agriculture or construction, is believed to be easily impressed by the 'easy money' image of many emigrants. Their attempts at becoming rich quickly are believed to lie behind an increase propensity for engaging in illegal activities, among which drug trafficking. According to Proença (2009), the growth of this latter phenomenon – already observable in the main urban centres – is perhaps the key ingredient for social exclusion in CV, and one with the potential to disrupt the very fabric of the Cape Verdean society.

A more widespread, albeit less salient consequence of migration has been the disruption of family life, this being one of the causes for the large number of female-headed families. When men migrate it is women who generally retain the responsibility for raising the children (Laurent & Furtado, 2008; J. Tavares *et al.*, pers.comm.[88]). The traditionally subservient role assigned to women and the tacit acceptance of men's promiscuous and uncompromising behaviour continue to perpetuate this reality, and the number of father-less household continues to rise (DGP, 2008). Burdened with the responsibility for the children and with lesser opportunities for acquiring new skills, women – and children – in these households are particularly vulnerable to poverty, with one in every three female-headed households currently living in poverty, compared to one in five for male-headed ones (INE-CV, 2008).

4.8 Initiatives for Growth and Poverty Reduction

This section discusses the main initiatives aimed at promoting development and reducing poverty. The more generic measures are addressed very briefly, with greater focus placed on interventions related to the country's ocean sectors.

[86] It has been noted that already in the early days of tourism expansion in the island of BV, tourism operators experienced difficulties in recruiting young workers locally, as these could afford not to work and instead rely exclusively on emigrants' remittances. These remittances were so disproportionately large that, albeit having the smallest population of all islands – despite being the third largest in area – and negligible economic activity, BV recorded a per capita income second only to that of Sal (GoCV, N.D.).

[87] In 2007, almost three in every four Cape Verdeans of age 15-24 was either unemployed or professionally inactive (INE-CV, 2009).

[88] Joaquim Tavares *et al.*, personal communication, n.38.

There exist two key government initiatives pertaining to socio-economic development and poverty reduction in CV. The first is the 'Growth and Poverty Reduction Strategy Document' (DECRP, *Documento de Estratégia de Crescimento e Redução de Pobreza*), which – currently in its second generation – provides the strategic foundation for all of government's policies. The second is the 'National Poverty Alleviation Programme' (PNLP, *Programa Nacional de Luta contra a Pobreza*), consisting today of a series of rural development interventions.

The DECRP, as its name suggests, combines measures for strengthening the ongoing economic transformation process with others for combating poverty, of which some aim at achieving the MDGs. On the whole, this document strives to transform CV into a nation open to the world, with dynamic production systems based on highly-skilled human resources and advanced technology and culture, where democracy is constantly improved and adapted to citizens' demands, and where social solidarity ensures that economic growth is inclusive (DGP, 2008). Towards this vision, government has set no less than ten medium- to long-term objectives, to wit: i) rationalise the roles of the state; ii) improve effectiveness of public administration; iii) enhance public governance, *inte alia* through greater transparency and openness; iv) promote a knowledge- and technology-based economy; v) enhance education and skills development; vi) broaden access to and improve competencies in development and use of communication technologies; vii) consolidate and promote Cape Verdean culture; viii) expand the provision of public services and pensions; ix) reduce poverty; and x) improve the state's planning, implementation and follow-up capacities. Measures towards achieving these objectives have been grouped under five axes, as summarised in Table 3.

Axis	Contents
I – State reform	- Rationalisation of state structures and outsourcing of non-core functions - Modernisation of public administration, incl. better accessibility for citizens and enterprises, improved qualification of staff and strengthening of public-private partnerships - Promotion of ethics and transparency in public management, *inter alia* through better auditing and reporting - Decentralisation and promotion of locally-managed regional development - Expansion and strengthening of opportunities for public participation in politics - Reinforcement of human rights and individual and collective freedoms, in part to ensure equality of opportunities for all citizens - Expansion and improvement of the quality of media services - Revision and improvement of the underlying mechanisms for democracy, with focus on population census - Reform of the justice sector, encompassing administrative, judicial, preventive and punitive aspects
II – Human capital	- Modernisation of the educational system to enhance its quality and equality at all levels - Promotion of Cape Verdean culture in its various forms, in part as a means of enriching tourism products
III - Competitiveness	- Safeguard of macroeconomic stability, in terms of public finance, monetary policy, 'real' economy and balance of payments - Implementation of cross-sector measures relative to reduction of costs, growth-promoting partnerships and promotion of private investment
IV - Infrastructures	- Improvement of land-use and development planning, incl. implementation of policy and legal instruments related to planning and environmental protection, urban re-qualification and sanitation, and support to migrants - Expansion of transport and communication infrastructure and services, relative to all modes and in all islands - Strengthening of energy supply services and investments in renewable sources, in part to reduce dependency on imported fuels - Integrated management of water resources, incl. measures for rational use of water and investments in water exploitation and conservation
V – Social cohesion	- Reduction of poverty and social exclusion, *inter alia* through incentives to the informal and social economy and the strengthening of the micro-credit sector - Enhancement of labour conditions, with focus on the respective legal framework and on inspection mechanisms - Improvement of the social protection system and expansion of coverage of vulnerable population groups - Promotion of employment opportunities for the poor, largely through partnerships with the private sector - Strengthening of food security, largely through measures for improving the efficiency of cereal imports and distribution - Reorganisation of the national health service, incl. increasing medical and nursing staff and expanding coverage to unserviced areas - Strengthening young peoples' ability to participate in social, economic and cultural life

Table 3 - Contents of the five axes of the DECRP

As for the roles assigned to ocean sectors in the DECRP, fisheries is almost completely absent from this document,[89] in spite of it being considered one of the "vectors of specialisation" of

[89] This is all the more surprising given the statement by the Director-General of Fisheries that policies in the

the country, alongside tourism, light industries, transports and communication technologies (DGP, 2008, p.132). No mention is made of the possible contribution of fisheries to improving production in the primary sector (see pp.144-147), nor of its role in enhancing food security (see p.170). Both of these aims are to be achieved exclusively through improvements in agriculture, a prospect that is all the more surprising given the natural constraints faced by this sector.

Tourism is, as expected, seen as the powerhouse of economic growth, but its linkages to ocean activities or to coastal environments are barely touched upon. It is supposed that growth in tourism will result in expansion of potential markets for local products and services – including fishery products and sea-based activities – but this issue is not explored in any depth. As discussed earlier, evidence of such multiplier effects has so far been mixed.

Tourism has been both a cause and a victim of inadequate coastal land occupation in CV, benefiting, but also suffering, from largely non-existent territorial planning. Within this latter domain, the DECRP points in two directions: firstly, it recognises the need to adopt and implement the necessary instruments for regulating land occupation and use, strengthening conservation measures and expanding waste management systems. Secondly, is respect of future tourism developments, it proposes to "positively discriminate" (DGP, 2008, p.140) so-called 'integrated projects' that combine in one single facility different functions and activities – such as private houses, hotel, golf course and marinas. This type of facilities target higher market segments, hence having the potential to generate greater revenues. On the other hand, they require more space and natural resources – in particular water and energy – and thus constitute a heavier burden on coastal areas. To minimise environmental risks associated with these developments, government relies not only on the reviewed planning instruments, but also on a revised "regulatory framework for the construction of recreational ports, marinas and golf courses" (p.140). It remains to be assessed how well tourism developments are integrated with coastal zone planning. As reviewed earlier, the experience so far has been one of confrontation rather than of harmonisation.

Transport is another of government's strategic development vectors. The overarching aim is to transform CV into a provider of international transportation and logistics services. All international ports are called upon to expand their capacity to attract international vessel traffic, but it is Porto Grande in Mindelo that is to play a pivotal role in this regard. Alongside

sector had been informed by the DECRP (E. Carvalho, personal communication, n.21).

the construction of the container transshipment hub described earlier, government proposes that integrated services be developed combining transportation, cargo handling and storage, stevedoring, ship maintenance and repairs, and ship and cargo administration, as a kind of cluster of maritime competencies of international standard capable of servicing the wider West Africa region. How and when this is to be achieved – other that through the construction of the Mindelo hub, for which plans have already been drafted – is not laid out in the DECRP.

In regards to the domestic dimension of the shipping and port sector, the DECRP mentions improvements to numerous ports as per the sector strategy reviewed above. It further calls upon national and foreign investors to assist in improving maritime links between the different islands by means of new services, with the aim of reducing current territorial asymmetries.

Final mention is due to the aim expressed in the DECRP of strengthening the capability of the state to control illicit activities at sea, namely trafficking of humans, arms and drugs, and illegal fishing. So far this capability remains very reduced. Also, the vessel traffic monitoring system mentioned elsewhere in that document (p.156) is not expected to be in operation within the coming years.[90]

In 1999 the Cape Verdean government adopted the PNLP, implementation having started one year later supported by different international funding agencies. From the outset the programme was based on the premise that sustained poverty reduction could only be achieved through decentralised interventions with active involvement of target populations. These were those populations identified as poor and 'needy', among which women, particularly those heading households; the unemployed, especially the young; vulnerable groups such as the elderly and the undernourished; and workers of labour-intensive schemes (the so-called FAIMO, *Frentes de Alta Intensidade de Mão-de-Obra*). The programme had three main aims, namely i) to assist inclusion of the poor in CV's economy, through training and skills development, promotion of income-generating activities and improvement of public infrastructures; ii) to improve access to social services in the fields of education, health, water and sanitation, and housing; and iii) to enhance the state's capacity to implement and follow up PNLP interventions.

In its original form, the PNLP was divided into three distinct programmes, of which one remains active to this day. The other two are the Project for Socio-economic Promotion of

[90] As of January 2010, the building where the vessel traffic system for Porto Grande will be housed was still under construction.

Disadvantaged Groups (PSGD, *Promoção Socio-económica de Grupos Desfavorecidos*) and the Social Sector Development Project (PDSS, *Projecto de Desenvolvimento do Sector Social*). The former, funded by the African Development Bank, ran between 2001 and 2006 in the islands of ST, SV and SA – which, together, were home to over 100,000 poor Cape Verdeans – and focused primarily on education (literacy) and skills development, with a smaller component devoted to the rehabilitation of public infrastructure and micro-credit. The PDSS received support from the World Bank's International Development Association and was implemented on all islands between 2001 and 2005 (World Bank, 2005). Its primary objective was to assist the conversion of the FAIMOs to new public-private initiatives capable of effectively carrying out necessary public works, while also offering improved conditions to poor workers.[91] Two other objectives concerned the capacity of the state to implement and evaluate poverty reduction programmes.

The component of the PNLP that is still active is the Rural Poverty Alleviation Programme (PLPR, *Programa de Luta contra a Pobreza Rural*), sponsored by the IFAD, currently in its third and last phase (covering the period 2008-2011; earlier phases were 2000-2003 and 2004-2007). Up to the 2007 the programme was implemented in the rural areas of five islands – ST, FG, SA, BR and SN – having been extended to SV and MA. Having defined as overall objective the reduction of poverty through employment creation and improved accessibility to basic services, the PLPR opted for a very flexible and context-specific definition of interventions. Fundamentally, the PLPR is based on the premise that it is the poor who shall have the responsibility for designing and implementing these interventions. To this end, the programme adopted a structure that has been described by its national coordinator in the following manner (R. Azevedo, pers.comm.).[92] In the target areas of the programme, local associations have been established – known as ACDs, *Associação Comunitária de Desenvolvimento* (Community Development Association)[93] – tasked with the identification of issues related to people's well-being, and subsequently, with the design of possible

[91] The FAIMOs were created in the early 1980s as a mechanism for providing employment to poor people in labour intensive works, largely with the aim of reducing vulnerability to the irregularities of agriculture. With time, and despite average wages below the poverty line (GoCV, N.D.), the FAIMOs became all too often an easy-to-grasp fall-back option for the poor, enabling accommodation to a poor but relatively predictable life. Hence these schemes soon became permanent rather that temporary employment options for the poor. Moreover, they were increasingly plagued by very low productivity (GoCV, N.D.; World Bank, 2005). Government had attempted to convert the FAIMOs to more efficient schemes, but had repeatedly given in to their critical importance as a safety net for the poorest (GoCV, N.D.).

[92] Ramiro Azevedo, PNLP, personal communication on 12 January 2010, Praia, ST.

[93] Where these associations already existed, they have been integrated into the programme.

interventions to address these issues. The interventions proposed by the ACDs are then screened by regional commissions (CRP, *Comissão Regional de Parceiros*), which then disburse PLPR funds to the ACDs for implementation of approved projects. The national office supervises the programme in its totality, and also provides training to regional and local delegates in matters of programme implementation and financial management. On the whole, the PLPR is a mechanism for transferring funds from the central government to local communities for implementation of projects addressing both the needs identified by these communities and the priorities of the PNLP.

Because of this arrangement, the PLPR only targets ocean activities if individual ACDs submit proposals addressing these. In some cases – as in that of the Calheta Fisheries Association – ACDs have been established that focus predominantly on fisheries and on the concerns of fishermen and fish vendors (J. Tavares *et al.*, pers.comm.).[94] Through the PLPR they then seek financial support for improvements to fishing vessels, gear and safety and navigation equipment, as well as to shore-based infrastructure. Since fisheries is the only ocean activity that poor people in CV's rural areas engage in, it is reasonable to presume that all support from the PLPR to ocean sectors goes to fisheries. Unfortunately, this author has not had access to any report of the type and dimension of such support.

[94] Joaquim Tavares *et al.*, personal communication, n.38.

4.9 Poverty Reduction Contents of Cape Verdean Ocean Policies

Starting with fisheries, a summary of the objectives defined in the PGRP for each of the country's nine commercial fisheries is presented in Table 4.

Fishery	Objectives		
	Ecological	**Economic**	**Social**
Industrial pole & line, large pelagics	- Gradual and constant increase in catches in EEZ and neighbouring waters	- Increase value of fishery products - Reduce external trade deficit	*(None)*
Semi-industrial seine, small pelagics	- Careful increase in catches	- Increase value of fishery products - Reduce external trade deficit	- Contribute to food security in CV
Industrial, lobsters	- Enable stock recovery	- Increase value relative to national fisheries production - Reduce external trade deficit	*(None)*
Artisanal, hand line, tunas & demersals	- Careful expansion within sustainable levels re. demersals	- Maintain employment levels in fishing communities	- Supply local markets
Artisanal, purse seine, small pelagics	- Careful expansion within sustainable levels	- Maintain employment levels in fishing communities	- Supply local markets - Contribute to food security
Artisanal, gillnet, small pelagics	- Careful expansion within sustainable levels	- Maintain employment levels in fishing communities	- Supply local markets
Artisanal, beach seine, small pelagics	- Keep effort to levels that do not affect other fisheries	- Contribute to supply of bait for other fisheries	*(None)*
Artisanal, divers, mixed	- Enable stock recovery re. coastal lobsters - Ban SCUBA fishing	*(None)*	*(None)*
Industrial, foreign vessels, large pelagics	- Enable exploitation of stocks not accessible to CV fleet	- Maximise economic return - Reduce external trade deficit	*(None)*

Table 4 - Ecological, economic and social objectives for CV's commercial fisheries
(Adapted from Almeida *et al.* [2003])

In addition to these objectives, it is also informative to consider the measures proposed by the authors to mitigate negative socio-economic impacts of resource management measures proposed for some of the fisheries, as those given an account of their concerns with these impacts. These measures are:

- for the industrial lobster fishery, reductions in catch volumes and, as a result, in profitability due to extension of the closed season are presumed to be compensated "naturally" by

fishermen directing their effort to the tuna pole and line fishery during the closure, a strategy they have long adopted;

- for semi-industrial vessels fishing for live bait in coastal waters, the imposition of a three nautical miles exclusion zone reserved for artisanal vessels might have meant a reduction in catches and jeopardised the supply of bait to industrial tuna vessels. The authors suggest that bait could instead be caught by artisanal fishermen, thereby guaranteeing supply and creating a new market for the latter. As was noted above (Table 4), this exclusion zone was revoked in 2009 in respect of semi-industrial seiners targeting small pelagics; and
- the restrictions imposed on the number of beach seines has direct effects for those dependent on this fishery. Little is know about the living conditions and level of dependency of fishermen engaged in this fishery (Almeida *et al.*, 2003), hence assessing impacts is not possible. However, these are not believed to be very significant, given the small and declining importance of this fishery (Almeida *et al.*, 2003; P. Varela, pers.comm.).[95]

In light of these considerations, it is possible to argue that CV's fisheries policy rests on two principal mechanisms for contributing to poverty reduction and human development. Firstly, a generalised expansion of catch volumes, which enables fishermen to increase sales, and contributes to food security in the country. As noted earlier, this latter aspects, notwithstanding its relevance in the country's current context, is not included among the food security-related measures of the DECRP. The second mechanism in the increase in value of fishery products, brought about by improvements in handling, transportation and storage conditions, as well as on-board conservation. As discussed earlier, these are all domains where notable improvements have been made in the course of the last decade, having enabled artisanal fishermen to progressively increase the value of their catches, and industrial fleets to successfully re-enter export markets.

Evidence of increases in catch volumes in recent years has not been found – as, indeed, no evaluation of the PGRP has so far been conducted (E. Carvalho, pers.comm.)[96] - but all fishermen interviewed by the author asserted, with varying degrees of confidence, that there is less fish than in the past (C. Oliveira; C. Brito; P. Varela; J. Tavares *et al.*, pers.comm.).[97] In

[95] Paulo Varela, personal communication, n.37.
[96] Edelmira Carvalho personal communication, n.30.
[97] Celestino Oliveira, personal communication, n.33. Paulo Varela, personal communication, n.37. Joaquim Tavares *et al.*, personal communication, n.38. Carlos Brito, Salamansa Fishing Association, personal communication on 7 January 2010, Salamansa, SV.

spite of this perceived reduction, it is generally accepted that modern gear enables better catches with less effort, and that fish sale prices are today much higher than before. In all, and especially for semi-industrial and industrial fleets, profitability is said to be higher than in earlier days (also E. Carvalho, pers.comm.),[98] and, although fishermen and fish vendors may hardly be counted among the rich, their socio-economic condition has generally improved in the last decade.

A contributing factor to this improvement has been the engagement of fishing associations with the PNLP, and the resulting support they have received. As reviewed earlier, some of this support has come in the form of funds for acquiring new fishing gear and safety and navigation equipment, as well as for improving storage and conservation. Several of these associations have also attracted funds to support initiatives not directly related to fishing, but which address other well-being needs of communities. Social security schemes for self-employed professionals is one of these, an aspect that the proposed first-sale fish auctions explicitly address.

In the shipping and port sector, government's concerns with development and poverty reduction have so far related to ensuring adequate levels of accessibility to all islands, with aims of reducing territorial asymmetries and taking the benefits of economic growth to the more remote areas in the country. To this end, through ENAPOR, government has embarked on an ambitious programme for the renewal and, in some cases expansion of the country's ports, which shall continue at least into the next five years. At the same time, the state has refrained from engaging directly in shipping operations and, accordingly, inter-island services are expected to be run by privates, supported, where necessary, but public-service contracts with the state. While no assessment of the impacts of improving inter-island maritime services has yet been openly disclosed, one may reasonably expect that such services will contribute to integrating remote regions in the country's commercial circuits, potentially facilitating access to markets and inputs to production, as well as exchange of ideas and knowledge.[99] For tourism, improvements in domestic maritime links are seen as crucial for diversifying and enriching

[98] Edelmira Carvalho, personal communication, n.21.

[99] The construction of a road along the north-eastern coast of SA, linking Porto Novo to Paúl, has been referred to as an example of the positive impacts that enhanced connectivity might have on poor people's lives. This road made it possible for farmers in the western coast of the island to get to Porto Novo – and, from there by ferry to the large market in Mindelo – without having to cross the mountain ridge that the old road runs through. Access to markets became significantly easier and faster, in an island that is CV's poorest and home to the largest percentage of rural inhabitants (João Pires, personal communication, n.47).

CV's tourism products, but how far this diversification and enrichment benefit the poor is not known.

Then there is the expansion of international ports and associated services, along with the plan for the construction of the Mindelo container hub. The aim being to create new services for export and to facilitate CV's external trade, the impacts of these investments extend to the whole of the economy. For the poor, however, impact may not be too expressive, and indeed be limited to a potential reduction in the price of imported goods, should gains in transport efficiency ever trickle down that far. Unskilled employment – the type most immediately accessible to the poor – in the maritime sector is, for the most part restricted to stevedoring in ports, although with growing automation of cargo handling, increasingly less so. Recall, in this regard, the significant reductions in the number of stevedores in CV's international ports in the course of the ongoing privatisation process.

The potential of the large proposed investments to generate sizeable tax revenues for the state should, however, not be overlooked. As Mitchell (2008) noted in respect of tourism taxes, it is not unreasonable to presume that part of that revenue will find its way into the country's poverty reduction programme.

Turning to seafaring careers, it was seen earlier that officer posts lack attractiveness due to the generally poor condition of the domestic fleet, and to the existence of better employment options onshore. Those who wish to pursue an officer career at sea most often opt for foreign vessels. Deck positions, on the contrary, still remain attractive to those lacking employment alternatives, and hence may constitute interesting options for those lacking formal education and for the unemployed. As reviewed earlier, many of the Cape Verdean poor fall into either of these categories. To which extent seafaring has effectively constituted a strategy for the poor to seek employment and escape poverty is not known.

Finally, there is the potential contribution of tourism to poverty reduction. In section 4.5, the somewhat benevolent arguments by Mitchell (2008) relative to that contribution were contrasted with others denying such contribution and asserting that tourism benefits have largely bypassed the poor (Gaspar, 2005). Be it as it may, government's recent tourism strategy largely pursues the tourism development paradigm that emerged in the 1990s and which has been dominant since. There is no clear indication that this strategy will accommodate concerns

with improvements to the lives of the poor, let alone integration of ocean sectors with tourism activities in view of contributing to poverty reduction.

5. Portugal

Portugal is the westernmost country on continental Europe, and one of its oldest states (Figure 3). One of the world's leading maritime powers in the age of discoveries, it was the last European country to grant independence to its African colonies, in 1975. It joined the European Union in 1986, twelve years after the fall of the autocratic regime that steered the country for close to five decades. Portugal is today one of Western Europe's poorest countries.

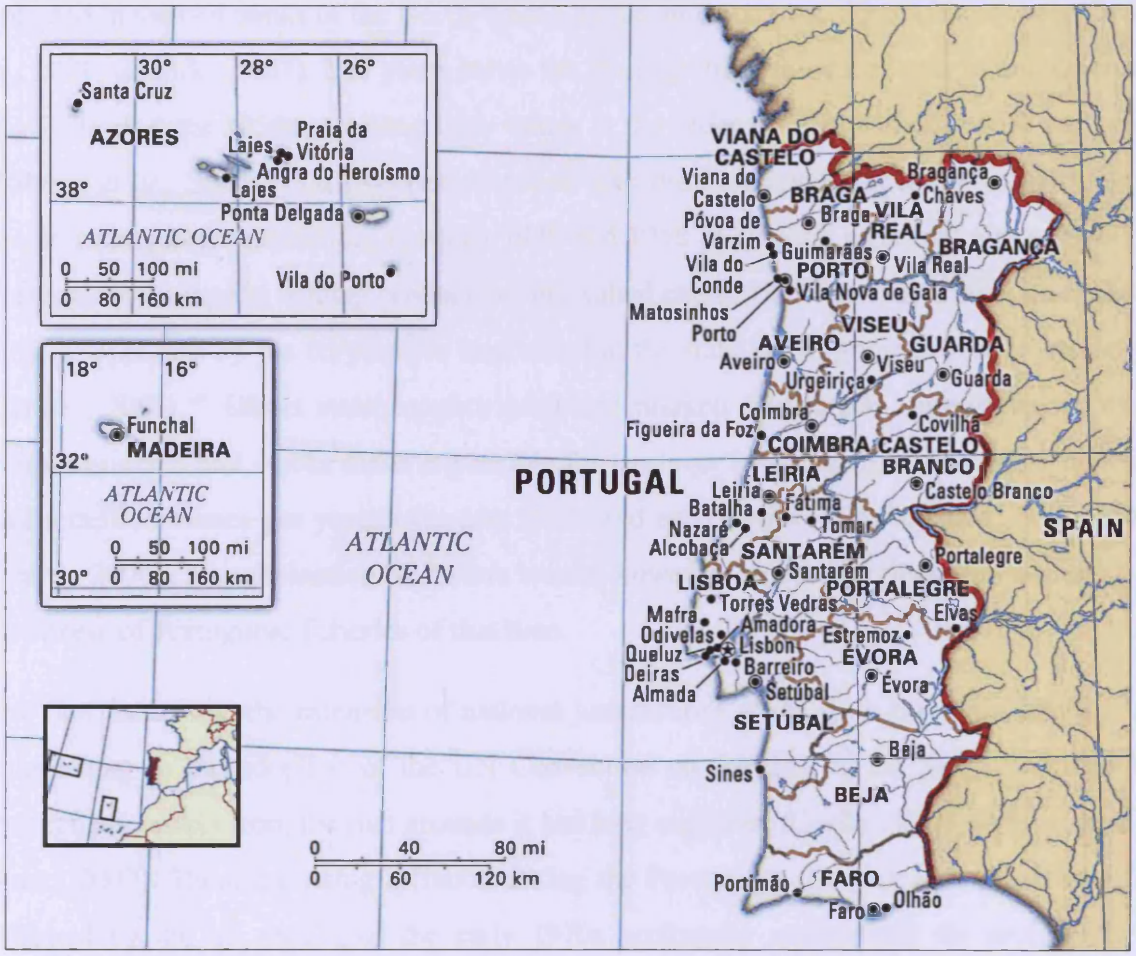


Figure 3 - Map of Portugal, with Madeira and the Azores
(Adapted from http://www.britannica.com/bps/media-view/61694/1/0/0)

5.1 Fisheries and Aquaculture in Portugal

In order to understand some of the structural problems of Portuguese fisheries today, it is instructive to briefly consider how these evolved in the past eight decades. It was namely in the late 1930s that the *Estado Novo* inaugurated its fisheries support plans, meant to ensure food self-sufficiency in the country and enhance the economic importance of the sector.[100] These plans were applied primarily to the Portuguese distant water fishing fleets, which, at that time, operated in the cod banks of the North-West Atlantic and along the West African coast (Dias *et al.*, 2001; Garrido, 2007). The plans led to the landings from this latter area to treble between the 1920s and the 1950s, reaching then values in the order of 50 thousand tonnes per annum (Ribeiro *et al.*, 2002). Cod fisheries, together with the associated processing industry, would see an even greater expansion: between 1938 and 1958 production increased almost five-fold, Portugal becoming the leading producer of dry salted cod in 1957 (Garrido, 2007), an evolution largely supported by the corporative structure that the state had engineered for the sector (see Garrido, 2001).[101] Direct state support, protected markets and largely unrestricted access to fishing grounds and stocks made it possible for landings from Portuguese fleets to approach half a million tonnes per year in the late 1950s and early 1960s (Garrido, 2007; Souto, 2007; Duarte, 2004). A combination of factors would, however, erode the pillars that sustained the grandness of Portuguese fisheries of that time.

The first factor was the extension of national jurisdictions at sea from the 1950s onwards and culminating in the adoption of the UN Convention on the Law of the Sea, which expelled Portuguese vessels from the rich grounds it had long exploited (Coelho, 2000; Dias *et al.* 2001, Souto, 2007). Then, the rising inflation during the Portuguese colonial wars (ca. 1963-1974), followed by the oil shocks of the early 1970s profoundly undermined the profitability of distant-water industrial fleets (Souto, 2007). Thirdly, with the demise of the Estado Novo in 1974, state protection and support to fisheries were terminated (Dias *et al.*, 2001). And, finally, the independence from Portugal of all colonies in 1975 brought an end to fishing activities in the respective waters (Souto, 2007). By 1980 production had fallen by close to 50% relative to 1960 (Souto, 2007), and even if an increase occurred up to 1986 – largely attributed to

[100] *Estado Novo* (The New State) was the designation of the autocratic fascist-inspired regime that ruled Portugal between 1933 and 1974, António de Oliveira Salazar having been its bow-figure.

[101] The state's self-sufficiency purposes were rather well served: as Dias and co-authors (2001) refer, between 1934 and 1967 the coverage of domestic cod consumption by domestic production rose from 16% to 82%, consumption alone having almost trebled from 51 to 136 thousand tonnes per annum over that period.

improvements in domestic fisheries – the fall would be resumed upon Portugal's accession to the European Economic Community that same year. This would place Portugal under a supra-national management regime that further restricted fishing effort for the sake of restoring over-exploited stocks. Since then, fishing opportunities are stipulated by the Common Fisheries Policy (CFP) of the EU in Brussels, including those in the waters of third countries. On the whole, the CFP regime has resulted in important reductions in fishing effort and, consequently, in landings, decommissioning of vessels and loss of jobs in the sector. The evolution of these two latter aspects in the course of the last 50 years is depicted in Figure 4.

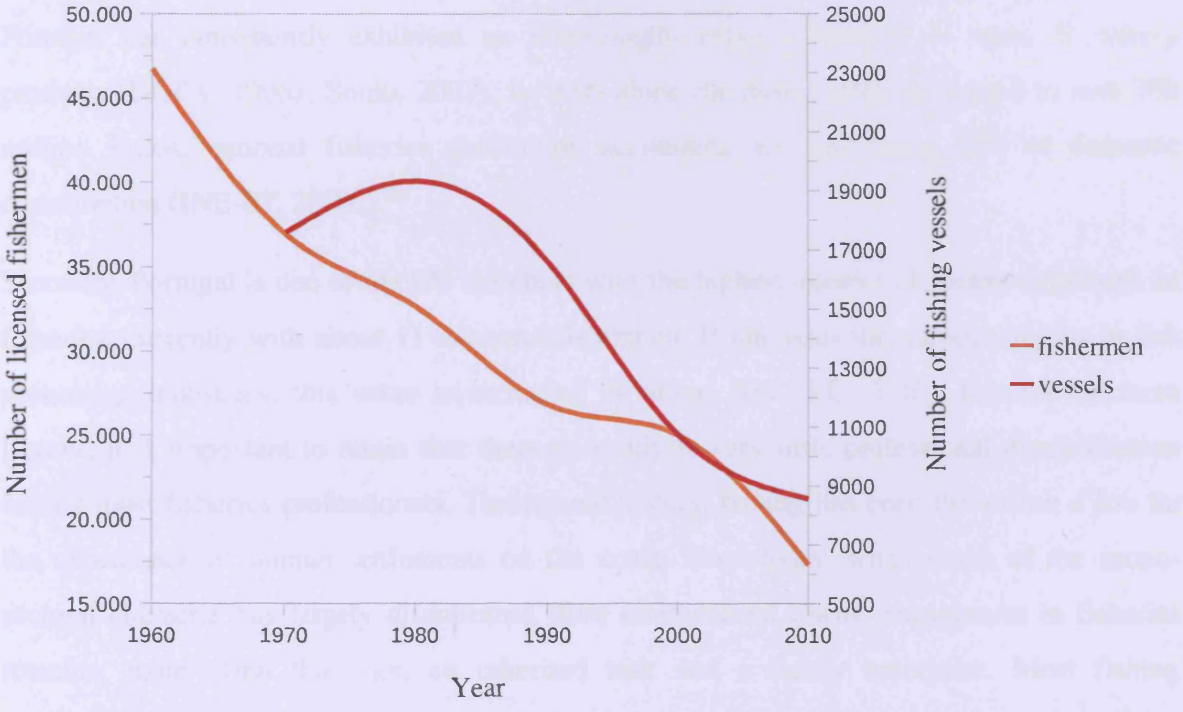


Figure 4 - Evolution in the number of fishing vessels and fishermen in Portugal in recent decades

(Sources: Baeta *et al.* [2009; vessels] and INE-PT [2010c; fishermen])

Landings have remained relatively stable over the last decade, with annual values in the range 145-165 thousand tonnes, roughly half the amounts landed in the early 1970s (Baeta *et al.*, 2009), the corresponding value at first sale oscillating between 250 and 300 million Euros (INE-PT, 2001; 2010).

The contribution of fisheries to the national economy is very limited and decreasing, currently corresponding to around 0.3% of GDP if one considers capture activities alone (INE-PT, 2009), and about twice this percentage if up- and downstream activities are considered (Duarte,

2004). The social dimension of the sector, however, greatly surpasses its meagre economic importance, two aspects being particularly relevant in this respect. Firstly, average per capita consumption of fish in Portugal ranks amongst the highest in the world, the estimated value of around 55kg per person and year being twice that of the EU average (EC, 2010). The broad social relevance of this aspect is best understood if one considers that fish products account for close to one third of all animal protein consumed in Portugal (Direcção-Geral das Pescas e Aquicultura [DGPA], 2006a). The plans for the promotion of fisheries of the *Estado Novo* added to an historical reliance on marine food resources and increased and consolidated a high level of dependency. The downside of this is that throughout recent history and up to this day Portugal has consistently exhibited an increasingly negative balance of trade of fishery products (DGPA, 2006a; Souto, 2007). In 2009 alone the trade deficit amounted to over 700 million Euros, national fisheries production accounting for just under 43% of domestic consumption (INE-PT, 2010c).[102]

Secondly, Portugal is one of the EU members with the highest number of people employed in fisheries, currently with about 17 thousand fishermen. If one adds the number of jobs in fish processing industries, this value is increased by about 30% (EC, 2010). Beyond the mere figures, it is important to retain that there generally is very little professional diversification among most fisheries professionals. Throughout history, fishing has been the *raison d'être* for the appearance of human settlements on the coast. Even today, when much of the mono-sectoral character has largely disappeared from most coastal towns, engagement in fisheries remains, more often than not, an inherited trait and a family enterprise. Most fishing communities still remain relatively cohesive and closed, and within them fishing still enjoys a high status (see Kovács, 2000; Coelho, 2000), which facilitates the recruitment of new professionals from within the community. Recruitment from the outside, however, has been a growing problem, largely due to the uncertain and risky nature of the profession when

[102] The 'cod campaigns', apex of the said plans by the *Estado Novo*, although aiming at self-sufficiency in the supply of fish products to the nation, ended up having the opposite effect. The massive investments in fishing capacity did lead to an impressive growth of Portuguese catches – from 22 to 97 thousand tonnes per annum between 1936 and 1967 – but the accompanying promotion of cod consumption (after all, the campaigns were as much about food self-sufficiency as they were about the financial promotion of the sector and the revitalisation of distant-water fisheries as a modern-day version of the glorious voyages of discovery of centuries gone by) – from 51 to 136 thousand tonnes per annum roughly in the same period – was such that the trade balance of cod products never reached positive values. The perverse effect of this policy became all the more evident when the collapse of Portuguese cod fisheries in the 1970s was not matched by a reduction in consumption, quite simply because food habits had already cemented over two generations (Dias *et al.*, 2001). This largely explains why the early 1980s mark the beginning of an explosive growth of the Portuguese trade deficit in fish products (see Souto, 2007).

compared to other alternatives (DGPA, 2006a). Because of the said poor diversification, dependency on fishing remains high in these communities (Coelho, 2000).

Capture activities are predominantly male, with older fishermen engaging more often in small-scale local fisheries than younger ones, who tend to favour coastal and distant-water fisheries because of higher profitability (see Ferreira, 2000). The role of women tends to vary with location, often reflecting the nature and wealth of the fisheries practised. In some instances women have taken part in beach seine fisheries (Antunes, 2007; Souto, 2007), but their most visible engagement in the sector has been as fish vendors (Abreu-Ferreira, 2000). In some communities, such as Nazaré, women catered for all post-capture activities, including processing and vending, in addition to overseeing the economy in the household (Escallier, 1999). Where processing industries are of size, as in the vicinity of Aveiro – the home port of much of the cod fleet of the mid-20th century, and the largest concentration of cod drying and salting facilities – women often found employment in processing plants. Yet. in other communities, such as Sesimbra, women barely engaged in any fishing-related matters, instead remaining largely responsible for the household and the children (Cruz, 2009 [1966]; Ferreira, 2000; see also Souto, 2007). Today, many of these women have their own employments outside the sector, often as a means of ensuring a more predictable income for the household (Escallier, 1999; J. Lopes, pers.comm.).[103]

Salaries in fishing are very variable and difficult to quantify. In most artisanal fisheries income is a fraction of sales, all costs discounted, plus often payments in kind – part of the catch, traditionally termed *'caldeirada'*. Industrial fisheries usually involve written contracts with pre-defined salaries, very much like any other job.

There exist a total of 162 fishing ports in Portugal, 96 in the mainland, 55 in the Azores and 11 in Madeira. A large number of these a small-size berths with limited handling and storage capacity, suitable only for small vessels engaged in local fisheries. On the other extreme one finds large industrial ports – such as those of Matosinhos, Aveiro or Peniche – capable of handling large industrial vessels, in the vicinity of which one also finds the largest fish processing facilities. First sales take place in state-run auctions at all major fishing ports, run by a state-owned company named Docapesca.

[103] João Lopes, Mútua dos Pescadores, personal communication on 17 November 2009, Sesimbra.

The Portuguese fishing fleet is commonly divided into five segments. The first is the so-called 'small fishery' (*pequena pesca*), carried out by small vessels (< 12m) employing a variety of gears targeting primarily small pelagic and demersal species in coastal waters in the mainland and the two archipelagos.[104] This is the segment with the largest number of vessels – 7,730 out of a total of 8,562 at the end of 2009 (INE-PT, 2010c) – and includes the smallest and most artisanal forms of fishing that still today sustain livelihoods and local economies in numerous coastal settlements.[105] In addition to contributing to the subsistence and income of households, the 'small fishery' is equally important for supplying high-quality and high-value fresh fish to restaurants and other tourism establishments. Because of its average small size and low degree of motorisation, this segment is the one most dependent on weather and sea conditions.

The next segment is the 'coastal fleet', a relatively heterogeneous grouping of vessels of 12 or more metres of length exploiting stocks in offshore waters of mainland Portugal and the two archipelagos, as well as, to a lesser extent, off northern Spain. As of December 2009, this fleet consisted of 676 vessels (INE-PT, 2010c). The designation 'polyvalent' usually applied to this segment indicates the broad range of species targeted by the coastal fleet, the most relevant ones in terms of catch volumes being octopus (*Octopus vulgaris*), European pilchard (*Sardina pilchardus*), scud mackerel (*Scomber japonicus*), black scabbardfish (*Aphanopus carbo*), horse mackerel (*Trachurus trachurus*) and pouting (*Trisopterus luscus*). In Madeira, and especially in the Azores, this fleet engages in the fishery of high-value large migratory pelagics. Together, 'small' and 'coastal' fisheries contributed with close to half of all landings in Portugal in 2009 (INE-PT, 2010c).

The trawler fleet, composed of 83 vessels of different sizes at the end of 2009 (INE-PT, 2010c), targets predominantly demersal fish species in the waters of mainland Portugal and, to a lesser extent, northern Spain. Trawlers accounted for approximately 10% of all landings in Portugal during 2009, the main target species being mackerels (*Trachurus spp.*), pouting, blue whiting (*Micromesistius poutassou*) and European hake (*Merluccius merluccius*). Demersal elasmobranchs, crustaceans – in particular shrimps, cephalopods and other demersal fish species make up the rest of this fleet's landings.

[104] The catches of this fleet segment are often presented as consisting predominantly of demersal species of fish, molluscs and crustaceans (see DGPA, 2006a; INE-PT, 2010c). Afonso-Dias and co-authors (2007), however, in a study dedicated to the 'small fishery' report that small pelagics such as European pilchard (*sardinha, Sardina pilchardus*) and chub mackerel (*cavala, Scomber japonicus*) make up around 40% of this landings of this segment. Landings statistics also confirm this observation (DGPA, 2010).

[105] According to Afonso-Dias and co-authors (2007), as of January 2005 60% of this fleet were vessels of length between 5.5 and 7 metres.

The fourth segment comprises small- and medium-sized coastal seiners, 124 of which operate along the coast of the mainland, while five vessels operate off Madeira (INE-PT, 2010c). This fleet contributes with around 40% of all Portuguese landings, largely of European pilchard, which, at close to 46 thousand tonnes, made up one third of all landings in the country in 2009 (INE-PT, 2010c; DGPA, 2010).

The fifth and final fleet segment comprises industrial vessels engaged in distant-water fisheries. At 44 vessels, this is the smallest segment by number of vessels, but the largest by vessel size, with average gross tonnage in excess of 890 tonnes per vessel (INE-PT, 2010c). These vessels operate under bilateral agreements signed by the EC with third countries, the most important fishing areas presently being the Northwest Atlantic (16,411 tonnes in 2009), Norway, Svalbard and Greenland (8,298 tonnes) and the Eastern Central Atlantic (6,226 tonnes). Minor fisheries have been carried out in the South-west and South-east Atlantic (6,385 tonnes) and the Indian Ocean (751 tonnes). The fleets exploiting the seas in the North consist primarily of trawlers catching cod (*Gadus morhua*), redfish (*Sebastes spp.*) and Greenland halibut (*Reinhardtius hippoglossoides*), as well as several other demersal species. CECAF fisheries target predominantly blue shark (*Prionace glauca*), followed by shrimps, flatfishes and octopus, the fleet combining trawlers and long-liners. This latter type of vessels makes up the totality of the fleet operating in the remaining foreign waters, which target exclusively large oceanic pelagics (INE-PT, 2010c).

The fish processing sectors has historically played an important socio-economic role, both at local and national level. Salting and sun-drying of cod expanded significantly in tandem with the *Estado Novo's* cod campaigns, and canning of sardines has long been the preferred means of adding value to the country's most abundant fishery resource. At present, the canning industry is the only fisheries sub-sector with a positive balance of trade, of approximately 34 million Euros in 2009 (INE-PT, 2010c). At the end of 2009 there existed 187 processing units in Portugal – of which 171 on the mainland, 11 in the Azores and five in Madeira – employing in excess of 6,500 people (INE-PT, 2010c). According to a survey conducted in 2005, over 70% of the workforce are women (DGPA, 2006a). In 2008 turnover in the processing industry exceeded one billion Euros, of which around three quarters came from the 'frozen' and the 'dry and salted' sub-sectors, at approximately equal shares. The 'canned products' sub-sector accounted for the remaining 25% (INE-PT, 2010c). This latter segment employs predominantly sardines, tuna and mackerel (*Scomber spp.*). Tuna is the main raw material for processing

facilities in the archipelagos, followed by black scabbardfish – particularly important in Madeira – and mackerel (DGPA, 2006a). Cod is the only 'dry and salted' product from Portuguese facilities, while a variety of fishery products are used in the 'frozen products' segment.

Aquaculture has been practised in Portugal for many decades, dominated by the production of freshwater species in the north and bivalve molluscs in the Algarve – with the clam *Ruditapes decussata* as the main species, accounting today for about 30% by weight and 50% by value of all aquaculture production in the country (2,200 tonnes and 20,029 million Euros in 2008, respectively; INE-PT, 2010c). Freshwater production has seen its importance decrease in recent decades – both in absolute and relative terms – whereas saltwater fish production has grown continuously, reaching approximately 40% of all aquaculture production. Gilthead seabream (*Sparus aurata*) and European seabass (*Dicentrachus labrax*) are the two most important saltwater species, whereas freshwater production is dominated by rainbow trout (*Oncorhynchus mykiss*). On the whole, the aquaculture industry in Portugal is relatively modest: total production has largely remained stagnant over the last decade, oscillating between seven and eight thousand tonnes per annum, corresponding to around 5% of all fisheries production in the country. Its total earnings of around 40 million Euros per annum earn it a modest 12th place among EU member states (CEC, 2010).[106]

5.2 An EC-inspired Fisheries Policy

> "It is thus free for all Portuguese and for persons legally domiciled in Portugal to fish all sorts of fish and, with any device, net or gear [...]; to salt it, pile it, dry it or melt it as one finds most convenient."

This statement, from a 1830 decree by the Portuguese king intended to suppress feudal-like privileges in the access to fishery resources (cited in Amorim, 2005, p.3),[107] embodies two conceptions that would dictate the course of marine resource management policies for the

[106] Portugal falls to the 16th place if one considers aquaculture production by weight. Note, in comparison, that the country ranks seventh in the EU by landed volumes of capture fisheries, and fourth by employment in the capture sector, after Spain, Italy and Greece (CEC, 2010).

[107] "*Fica portanto livre a todos os portugueses e pessoas legalmente domiciliadas em domínios de Portugal, pescar toda a sorte de peixe e com qualquer armação, rede ou arte [...]; salgá-lo, empilhá-lo, secá-lo ou derretê-lo como mais lhe convier.*"

century to follow: freedom of access to and inexhaustibility of fishery resources. There is ample evidence today of how misguided this latter conception was, and, partly because of that, the former has progressively been replaced by an international legal system regulating access to resources at sea. Hence, at the beginning of the 21st century, the discourse of the fisheries legislator had been profoundly altered: faced with the dismal status of many of Europe's fish stocks (CEC, 2001), a policy was adopted that, for the purpose of ensuring "exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions", followed "the precautionary approach in taking measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine ecosystems" (Coucil Regulation (EC) no.2371/2002, p.61, art.2).

This snapshot very much captures the broad trend in fisheries management in Portugal and elsewhere. From a remotely feudal regime of pre-liberal times, through a largely *mare liberum* approach – at times with explicit and very sizeable state investments in fishing fleet expansion - and ending in a predominantly restrictive framework elaborated for the most part by a supra-national entity. It is precisely this latter aspect, namely the application of the EU CFP in Portugal, that this section is concerned with.

The CFP had its initial developments in the 1970s, having since evolved to become a comprehensive framework for regulating most of the environmental, economic and administrative aspects of marine fisheries in the EU.[108] The rationale for fisheries to be managed at European rather than at member state level is that fish stocks move across borders and measures taken in one country necessarily affect fisheries in other countries. Another justification is that fish trade is already largely integrated in the EU, and so should capture activities and hence stock management (CEC, 2009a). The CFP will not be discussed in its totality here; instead focus is placed on the European Fisheries Fund (EFF), a financing tool for implementation of the policy, which has largely shaped the current Portuguese fisheries policy.

[108] Aquaculture is currently not regulated by the CFP, although other EU regulations do apply to issues of environmental quality, state support and trade in aquaculture products (The specific CFP regulation states that the policy covers aquaculture, but it provides for no measures relative to aquaculture production). The actual development of the sector remains an exclusive responsibility of each individual member state. However, the European Fisheries Fund, which is a key instrument for implementation of the CFP, explicitly targets aquaculture development (see below). Moreover, in the ongoing discussion of the reform of the CFP, the question has been raised as to whether or not aquaculture should be included in the revised CFP (CEC, 2009a).

Suffice it to briefly allude here to the central domains of intervention of the CFP, summarised in Table 5.

Domain	Components
Conservation and sustainability	Regulation of access to sea areas and resources, and promotion of ecological sustainability of fishery resources, primarily through species/stock-specific multi-annual management or recovery plans involving: - limitation of fishing effort; - catch limits; and - technical measures pertaining to fish size, fishing gear and fishing grounds.
Adjustment of fleet capacity	Prevention of fleet expansion beyond the level of 1 January 2003, with strict rules regarding state aid for fleet expansion and reduction. Includes a EU-wide fleet register.
Control and enforcement system	- Ensuring compliance with rules and EU-wide harmonisation of sanctions; - Data collection for adequate fisheries management; - Clarifying roles and responsibilities of authorities at different levels (EU, national, sub-national); - Ensuring traceability and control of fishery products.
International agreements	- Fishing opportunities for member states in the waters of third countries; - CEC involvement in the work of international organisations, e.g. RFMOs.
Market for fisheries products	- Inspection and enforcement of food hygiene norms; - Support to producer organisations for the development of marketing strategies; - Facilitation of external trade; - Labelling and traceability of food products.
Research and data collection	- Support to national programmes for data collection, and to fisheries advisory organs - Funding of research and consultancy related to fisheries

Table 5 - Domains of intervention of the CFP and respective components
(Sources: Council Regulation (EC) no.2371/2002;
http://ec.europa.eu/fisheries/cfp/index_en.htm)

If the components included in Table 5 are predominantly of regulatory nature, the EFF, on the contrary, is mainly facilitatory, its aim being to assist the fisheries sector to adapt to, and to continue to develop under changing environmental, socio-economic and regulatory conditions. The EFF is a mechanism for channelling EU funds to interventions in fisheries and aquaculture in each member state, in response to the needs of the respective fisheries sector, as identified in purposely designed national fisheries strategic plans and operational programmes. Given that this plan and this programme represent the fisheries policy of the Portuguese government for the period 2007-2013, their key elements and record of implementation will be reviewed here.

As its name implies, the National Fisheries Strategic Plan (PEN-P, *Plano Estratégico Nacional – Pesca*) constitutes the fisheries policy *sensu lato*. It is hierarchically superior to the Fisheries Operational Plan (PO-P, *Plano Operacional – Pesca*), which is largely dedicated to specifying

thematic domains eligible for EU funding. Aims, principles and priority areas are common to both instruments, as are most of the measures. Exclusive to the PEN-P are domains falling outside the scope of the EFF and resulting from CFP obligations, namely inspection and control of fishing activities, data collection, international fisheries agreements and training and certification of fisheries professionals. These domains are briefly reviewed here.

As regards inspections, control and data collection, the strategy is to continue enforcing CFP requirements. Regarding fisheries agreements, which are of vital importance for the the Portuguese distant water fleet, the PEN-P explicitly argues in for the maintenance of shrimp trawling opportunities in Guinea-Bissau, Senegal, Mauritania and Guinea-Conacry; for the deployment of coastal fishing vessels to Morocco; for the promotion of swordfish (*Xiphias gladius*) fisheries in the Indian Ocean; and for access to poorly exploited grounds in the Pacific. From the figures presented in Table 6 it is not possible to conclude whether or not government has been successful in expanding fishing opportunities in those areas. Table 7 gives an overview of the EC fisheries agreements signed or renewed after 2007 where Portugal is one of beneficiaries.

Fishery	Landings per year (tonnes)				
	2005	2006	2007	2008	2009
CECAF, shrimp	248 [1)]	208 [2)]	n.d.	346 [1)]	310 [1)]
Morrocco	nil	nil	352	655	149
Indian Ocean; swordfish	1,067 [3)]	2,201 [4)]	2,073	407	630 [5)]
Pacific Ocean	n.d.	n.d.	439	n.d.	n.d.

Table 6 - Landings in weight for selected international fisheries for the Portuguese fleet, in the period 2005-2009

(Sources; INE-PT [2006, 2007, 2008b, 2009, 2010c] and DGPA [2006b, 2007, 2008, 2009, 2010])

Notes: n.d. - not defined; 1) Values are for *gamba branca*; 2) Values are for *camarão rosado do sul*; 3) Values taken from DGPA (2006); INE-PT (2006) indicates 821t for Indian Ocean swordfish; 4) Values taken from DGPA (2007); INE-PT (2007) indicates 1,778t for Indian Ocean swordfish; 5) Values taken from DGPA (2010); INE-PT (2010c) indicates 361t for Indian Ocean swordfish.

Partner country	Period	Opportunities for Portugal
Central Eastern Atlantic		
Cape Verde	Mar 2007 – Aug 2011	7 tuna surface long-liners
Côte d'Ivoire	Jul 2007 – Jun 2013	5 tuna surface long-liners
Guinea Bissau	Jun 2007 – Jun 2011	1,066 GRT shrimp trawlers; 4 tuna seiners and surface long-liners
Mauritania	Aug 2008 – Jul 2012	886 GRT vessels for crustaceans except lobsters; 300 GRT vessels for spiny lobster; 3 tuna pole & line and surface long-liners; 6,000 tonnes pelagics, freezer trawlers
Morocco	Feb 2007 – Feb 2011	10 small-scale long-liners; 4 demersal long liners; 1,333 tonnes pelagics for industry
Northwest Atlantic		
Greenland	Jan 2007 – Dec 2012	Quotas set for target species negotiated among EC member states fishing in the area, mainly from Germany, Denmark, UK, Spain and Portugal
Pacific Ocean		
Micronesia	Feb 2007 – Feb 2010	4 tuna surface long-liners
Indian Ocean		
Madagascar	Jan 2007 – Dec 2012	7 tuna surface long-liners
Mozambique	Jan 2007 – Dec 2011	9 tuna long-liners

Table 7 - Fishing opportunities for Portugal under EC fisheries agreements signed or renewed after January 2007
(Source: http://ec.europa.eu/fisheries/cfp/international/agreements/index_en.htm)[109]

In respect of training and certification of fisheries professionals, government has continued providing sector-specific training in so-called FOR-MAR centres, targeting both new entrants and established professionals, here for upgrading of certifications and for specific training, e.g. safety at sea. The number of trainees has oscillated around 3,000 per year during the last decade.

As to the EFF and the PO-P, they are structured around four key axes. The first axis deals with adjustments of fleet capacity, reduction of fishing effort directed at vulnerable stocks and cessation of fishing opportunities outside EU waters. For situations of either permanent or temporary cessation, the EFF makes available financial compensation for lost income. A number of species-specific recovery plans have also been elaborated under this axis, and it is on the basis of these plans that fleet and effort reductions are carried out.[110] At the end of 2009

[109] Where the figures presented on this website did not match those of the text of the respective agreement, the latter were used, as in the case of the agreement with Mauritania.

[110] At the end of 2009, adjustment and recovery plans in Portugal existed for i) southern European hake and langoustine; ii) bivalve molluscs trawl fisheries (*ganchorra*); iii) Greenland halibut; iv) beam trawl fisheries;

a total of 423 vessels had applied for compensation under the temporary cessation scheme, the majority of which had been idle for 45 or more days in the period 2008-2009 (MADRP, 2010).[111] Added to these, 44 submissions were approved for permanent cessation up to December 2009, of which nine of vessels operating in the Azores. Demolitions have since been taking place.

Other than compensatory premia for cessation of activity, axis one contemplates three other categories of socio-economic compensation for people affected by interrupted fishing activity. These are: support to professional reconversion and diversification into non fisheries-related activities (e.g. marine tourism); grants for the acquisition of fishing vessels (max length 24m, 5-30 years old), exclusively for young professionals (less than 40 years of age) and meant to retain them in fishing; and a one-time grant of 10,000 Euros for crews of decommissioned vessels. This latter grant is, together with the cessation premia, linked to effort and fleet adjustment plans. During 2009, 22 grant requests were approved, the respective disbursement having presumably been carried out during 2010 (MADRP, 2010).

A final component of axis one deals with financial support to investments in vessels aimed at enhancing working and living conditions on-board, at improving fish handling and storage processes, and at reducing the environmental impact of fishing. For small coastal fisheries, vessels of less than 12m are also eligible for support for improving management and marketing, productivity and professional skills of fishermen. Interest for these types of support has been considerable, with over 450 submissions in the first two years of the programme, 209 of which – worth 2.9 million Euros – had been approved by December 2009 (MADRP, 2010).

Axis two of the PO-P concerns investments in aquaculture and in the fish processing industry, in particular investments in equipments and infrastructures, both for new and existing installations. As at the end of 2009, all disbursements under this axis related to this type of investments (MADRP, 2010). Projects are assessed on criteria of technical soundness, environmental friendliness and socio-economic impact, including here the creation of

v) small pelagic fisheries (one plan in the mainland, another in Madeira); vi) surface long-liners targeting swordfish and bottom long-liners targeting deep-water species; vii) vessels that had operated for more than 150 days in 2007; and viii) black scabbardfish in Madeira (MADRP, 2010).

[111] Regarding the implementation of the PO-P, it is important to note that, upon official approval on 11 December 2007, the first half of 2008 saw little else but the elaboration of necessary legal instruments and the establishment of the programme management unit. Projects were submitted only once these preparatory steps had been completed, roughly from the second half of 2008 onwards. For this reason, there was little in the way of actual implementation of the PO-P before 2009. Axis four of the programme, in particular, because of its novelty, only began implementation in the early months of 2010 (MADRP, 2008; 2009; 2010). The PO-P progress report for 2010 is due at the end of the first half of 2011.

employment. The PO-P progress reports so far produced contain no information relative to these aspects, so it is not possible to assess what the impact of these investments has been on people's lives.

A further component of the second axis is the strengthening of financial and insurance services in the fisheries sector. The aim is to expand such services, and to encourage the establishment of funds for risk capital and technological development. At the end of 2009, no submission under this component had been delivered (MADRP, 2010).

Axis three is the least specific of all PO-P axes, comprising five separate categories of measures. The first, termed "Collective actions", involves support to the establishment or expansion of organisations in the fisheries sector. These may serve a variety of purposes: as an example, in the 2009 PO-P implementation report an association in Póvoa do Varzim is mentioned, the aim of which is to create awareness and build capacity in the field of safety at sea, as well as to make available safety equipment to fishermen (MADRP, 2010).

The second component includes funds for projects for protecting and rehabilitating aquatic ecosystems. Here, the project approved in 2009 – worth over 1.5 million Euros – is for the establishment of artificial reefs off Nazaré, with aims of biodiversity restoration and diversification of fish catches (MADRP, 2010).

Component three regards financial support to public and private investments in fishing ports to improve structural and operational conditions, in view of enhancing safety and increasing productivity and competitiveness. A submission under this component was delivered in 2008, relative to the rehabilitation of the breakwater at the fishing port of Ericeira (MADRP, 2009).

Promotional campaigns and initiatives relative to marketing of fishery products make up the fourth component of axis three. The fundamental aim is to increase the value of and find new markets – preferably foreign ones – for Portuguese fishery products. So far only one initiative has been awarded funding, namely for the participation of an association of cold-storage industries in trade fairs (MADRP, 2010).

The fifth and final component of axis three addresses financial support to research and technological development projects in any domain of fishing. Generic examples include the testing of new fishing gear, development of new fish processing equipment and design of innovative management systems. 2009 saw the approval of two projects, namely one by a

fishing company for the testing of a more selective surface long-line for use in central and south Atlantic fisheries; and another by Évora University for scientific research to support marine conservation in the south-western coast of the mainland (MADRP, 2010).

The fourth thematic axis of the PO-P is arguably the most interesting one in terms of multi-dimensional socio-economic development. Compared to the three preceding axes, it is also the most innovative one in relation to earlier programmes. Its aim is to support interventions for broad-based sustainable development of fisheries-dependent coastal zones. These interventions follow development strategies elaborated specifically for these zones by consortia of public and private entities with a stake in fishing and concerned with regional development, so-called 'Coastal Action Groups' (GAC, *Grupo de Acção Costeira*). Taking into consideration local conditions and development needs, those strategies must structure their proposals around three main objectives, as per EFF guidelines: i) diversification and restructuring of socio-economic activities, in view of enabling the integration of fisheries into other economic activities; ii) promotion and enhancement of the quality of coastal environments and communities, largely meant to improve the status of natural and built environments; and iii) skills development and cooperation for effective implementation of the development strategy. The majority of coastal municipalities in mainland Portugal are eligible to axis four funding, the exceptions being the larger, economically more diversified coastal urban centres around Lisbon and Porto.

Year 2008 saw the constitution of the seven GACs and the elaboration of the respective strategies. The respective management units have since been created, and in the early autumn of 2010 the first calls for projects were issued by the different groups. These calls close in the early months of 2011, and will be repeated annually. Each individual GAC will then select the projects to be funded, and, upon signing of contracts, will be responsible for overseeing the respective implementation. Actual practical implementation is the responsibility of project proponents. With implementation beginning in 2011, it is presently not yet possible to assess how far GAC strategies and the respective projects will contribute to "improving quality of life in fisheries-dependent coastal communities" (DGPA, 2006a, p.68).

5.3 The Portuguese Maritime Cluster

> "The context of broad liberalisation, high competitiveness and high risk relative to enterprise profitability that exists in the maritime sector has translated into a drastic reduction of this activity in Portugal." (SAER/ACL, 2009, p.190)

More than 400 years have passed since Portugal was a maritime power of international relevance. Since having been overtaken by the Dutch and later the English in the early 17th century, and until the 1970s, the Portuguese merchant fleet was a relatively modest presence, engaged predominantly in trade between mainland Portugal and its overseas territories. Indeed, it were two of colonialism's cardinal prerogatives – protected markets and state support – that enabled some degree of flourishing of the Portuguese merchant marine. And ultimately it was the collapse of this cushioned environment in the mid-1970s that justifies the quote that opens this section: with the end of the *Estado Novo* in 1974 and the quick-to-follow demise of the colonial empire, Portuguese merchant shipowners were thrown into an arena occupied by stronger, foreign players, and largely left there by themselves, deprived of the state support that for so long had ensured their survival. Not even the historical relations with the former colonies provided any enduring lifeline, as the economies of these newly independent countries all but collapsed. The diminishing trade with the former metropolis could no longer sustain the fleet at the same level. Ill-prepared to compete for new markets and new routes, a "drastic reduction" of this fleet quickly ensued, as illustrated in Table 8.

		Year							
		1975	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2009**
Portuguese-controlled fleet	Number	n.a.	97	87	63	63	67	50	52
	Avg. DWT	n.a.	12.2	14.2	11.1	13.7	11.3	10.7	10.9
Portuguese-controlled and -flagged fleet	Number	140	94	77	59	53	52	33	36
	Avg. DWT	11.1	12.6	14.8	11.4	9.7	7.4	4.1	3.6
Vessels in conventional Portuguese register	Number	n.a.	94	77	58	30	28	17	13
	Avg. DWT	n.a.	12.6	14.8	11.5	4.6	5.9	8.3	6.2

Table 8 - Evolution of the size of the Portuguese-controlled and -flagged merchant fleet, 1975-2009
(Sources: CEO [2004], Coelho [2005], IPTM [2009a] and Magalhães [2010])[112]

[112] The open MAR register, with a high proportion of foreign-owned vessels (>75%), has evolved more favourably since its establishment in 1990: 1990: 1; 1995: 47; 2000: 135; 2005: 105; 2009: 108 (IPTM, 2009b; 2010).

These figures show that this reduction has occurred on different fronts. The Portuguese flag has not only been emptied of vessels, but, contrary to the trend observed globally, is composed today of vessels of half the average capacity of those three decades ago. It has been noted, in this respect, that the conventional register includes predominantly small vessels serving Madeira and the Azores, where they still enjoy a semi-protected regime (SAER/ACL, 2009; Comissão Estratégica dos Oceanos [CEO], 2004). On the whole, Portuguese shipowners have not only deserted the conventional register – where all vessels are controlled by Portuguese owners (Instituto Portuário e dos Transportes Marítimos [IPTM], 2009a), implying that vessels leaving the flag are Portuguese-owned – but they have also lost capacity, markedly in terms of number of vessels and, to a lesser extent, in terms of average payload.[113] What the two upper rows of Table 8 also depict is a process of flagging-out, which the creation of the Portuguese open international register MAR in 1990 does not appear to have countered.

This decline in the size of the fleet has been accompanied by a reduction in the number of Portuguese seafarers. During the *Estado Novo* state support was granted directly to seafaring careers, and in the decade that followed the 1974 coup, limited employment opportunities on land and improvements to working and living conditions on- board still prompted many to pursue a career at sea (Baptista, 2005). In the late 1980s the situation started to reverse, to the point where, in recent years, there have hardly been enough Portuguese officers to occupy bridge or engine positions, while officer courses in the country's only nautical academy attract a diminishing number of candidates.[114] With seafaring posts still relatively well remunerated – a captain's salary is comparable to that of a university rector (Gabinete de Estratégia e Planeamento, 2010a; L. Carneiro, pers.comm.)[115]– the lack of attractiveness of seafaring careers has probably more to do with the discomfort of prolonged absences at sea and the relatively low profile of the profession. For lower-ranked deck posts, employment at sea still constitutes

[113] A decline in the number of Portuguese-flagged and -controlled vessels (second row in Table 8) does not, by itself, imply a reduction in Portuguese owners' capacity. It could simply have meant that Portuguese owners had opted for flagging their vessels elsewhere, as indeed has been common practice in the shipping industry (Japan, for example, the country with the world's largest controlled fleet – by number of vessels – had, as of January 2010, over 80% of its fleet registered outside the country [corresponding to 3,301 vessels over 1,000 DWT; UNCTAD, 2010].). However, as the first row depicts the flagging-out by Portuguese shipowners occurred in tandem with a pronounced capacity reduction.

[114] During 2009 and 2010, as a result of the international financial crisis, several Portuguese officers were dismissed from their positions with shipping companies abroad. Many having returned to Portugal, there has since been no shortage of officers to man Portuguese vessels (João Pimenta de Abreu, Fresti Lda, personal communication on 6 January 2011, Estoril).

[115] Luís Carneiro, Sacor Marítima SA, personal communication on 24 January 2011, Lisbon.

an attractive alternative for those lacking the formal education necessary for jobs on land, where competition is high. A similar situation exists in Cape Verde.

The 1980s mark a turning point also for Portuguese commercial seaports. The port system had expanded considerably in the two preceding decades, with the building of the deep-water port in Sines and structural improvements to several of the smaller ports, including those of Madeira and the Azores (CEO, 2004). Here, the granting of regional autonomy relative to port administration enabled the ports in the archipelagos to develop according to the needs of the region, independently from the port system in the mainland. As Figure 5 illustrates, cargo volumes handled at Portuguese seaports more than doubled between 1970 and 1980, rising by a further 50% in the decade that followed.

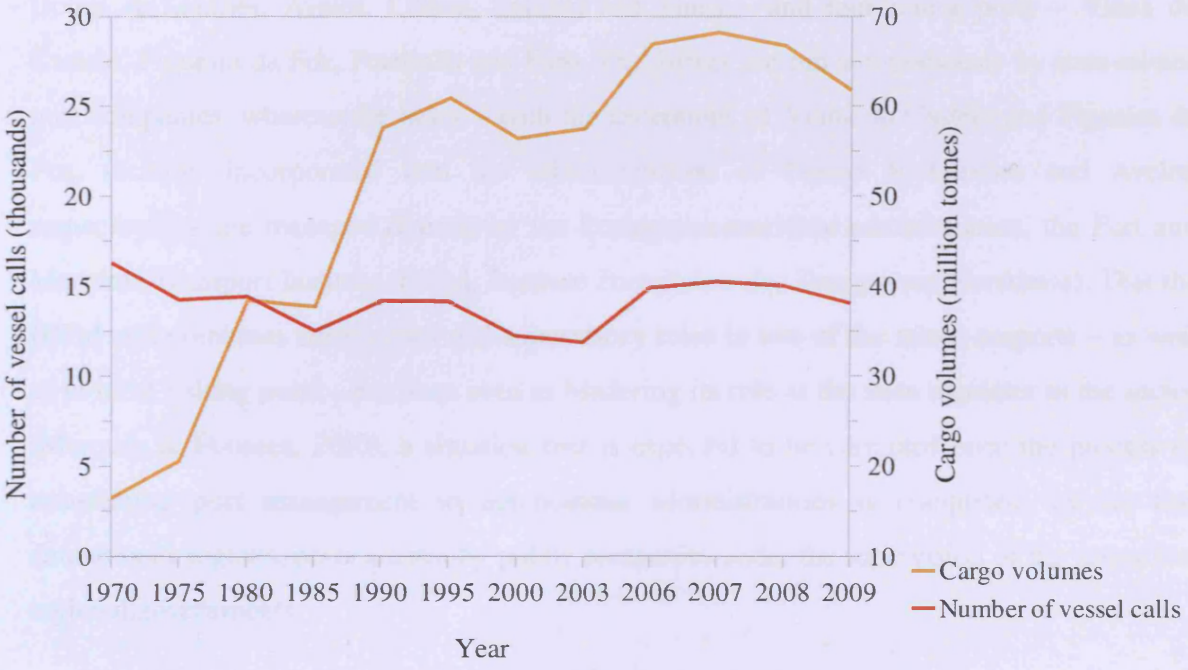


Figure 5 - Evolution of vessel traffic and cargo volumes at Portuguese commercial seaports, 1970-2009
(Sources: SAER/ACL [2009] and INE-PT)[116]

The 1990s was a decade of stagnation of this growth, which picked up again in the middle of the first decade of the new millennium. The downturn observed in the last two to three years has been attributed to the consequences of the international financial and economic crisis

[116] INE-PT data was retrieved from the annual publication "Transport Statistics" (*Estatísticas dos transportes*) for years 2003 to 2009, accessible online at http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes.

(IPTM, 2009b; Marques & Fonseca, 2010). The figures relative to vessel calls have remained fairly constant throughout the last four decades, an evidence of the use of larger and more cargo-efficient vessels.

Through seaports transit over two thirds of Portugal's imports and over 40% of its exports (by weight; SAER/ACL, 2009). By value these percentages are cut approximately by half, indicating that maritime transport is used primarily for goods of relatively low value, such as fuels and cereals in bulk. In the archipelagos of Madeira and Azores, maritime transport is crucial for supplying most goods to the various islands, a fact justifying the signing of public service contracts with shipowners serving these lines.

The commercial port system in the mainland comprises five major ports – from north to south: Douro & Leixões, Aveiro, Lisboa, Setúbal and Sines – and four minor ports – Viana do Castelo, Figueira da Foz, Portimão and Faro. The former are run autonomously by state-owned port companies, whereas the latter – with the exceptions of Viana do Castelo and Figueira da Foz, recently incorporated into the administrations of Douro & Leixões and Aveiro, respectively – are managed directly by the Portuguese maritime administration, the Port and Maritime Transport Institute (IPTM, *Instituto Portuário e dos Transportes Marítimos*). That the IPTM still combines commercial and supervisory roles in two of the minor seaports – as well as in most fishing ports – has been seen as hindering its role as the state regulator in the sector (Marques & Fonseca, 2010), a situation that is expected to be corrected once the process of transferring port management to autonomous administrations is completed. In the two autonomous regions, ports are run by public companies under the supervision of the respective regional governments.

A final maritime sub-sector deserves mention in this overview, namely that of ship-building and -repair. This was, until the 1970s, an important component of Portugal's industrial production, employing at its peak something like 30,000 people in shipyards and associated facilities (Grupo de Trabalho da Indústria Naval [GTIN], 2010). In the 1960s Lisbon was home to one of the world's largest dry docks, proudly serving a fleet of large tankers that the oil shocks of the following decade would render unprofitable. However, it was arguably the end of state protection of the merchant and fishing fleets after the 1974 regime shift that prompted much of the decline of the Portuguese ship-building industry (SAER/ACL, 2009). Left with an over-sized production capacity, the country was unable to compete with emerging ship-building nations in Asia.

Today, the sub-sector has reached a certain level of maturity and balance, with some companies having gained international prominence, both in ship-building – the case of the Viana do Castelo Shipyard (*Estaleiros Navais de Viana do Castelo*) – and in ship-maintenance and -repair – the case of Lisnave. The country is believe to be particularly well-positioned for this latter segment, as some of the world's largest shipping routes pass through Portuguese waters (SAER/ACL, 2009). In 2008 the turnover in the sector exceeded half a billion Euros, an increase of close to 20% relative to 2007. The respective workforce is estimated at approximately 4,830 people, earning an average 17,000 Euros per annum (Ventura de Sousa, 2010), a value close to double the national average yearly salary. Despite facing challenges in terms of productivity and competitiveness, companies in this sub-sector often play an important socio-economic role at the local level, especially through employment creation (GTIN, 2010).

5.4 Strategic Guidance for the Maritime and Port Sector

Shipping and port policy in Portugal is shaped at three distinct levels: the International Maritime Organization (IMO), in what concerns norms for safety and environmental performance of vessels engaged in international voyages; the EU, in regards to additional safety and environmental protection requirements, as well as to the promotion of maritime transport in the European space; and at national level, where articulation of the maritime sector with other elements of the country's economy and society is a key concern.

Involvement with the IMO has had two main components. Firstly, as an IMO member, Portugal has contributed on several occasions with proposals or comments to proposals relative to the areas of intervention of the organisation. Secondly, the country has ratified IMO conventions and implemented and monitored the implementation of the respective measures, as per its member obligations. The record here cannot be said to be exemplary, with the Portuguese state failing to ratify most of the more recent conventions, such as the Bunkers, Anti-fouling, Ballast Water, Nairobi (on ship-wreck removal), Hong Kong (on ship recycling) and HNS (harmful and noxious substances) 1996 Convention and the respective 2010 protocol (International Maritime Organization [IMO], 2011).

The activity of the EU in the field of maritime transport is, in what concerns safety at sea, pollution prevention and training and certification of seafarers, an extension of the work done

at the IMO. With the aim of improving the performance of European fleets in those domains, the EU works towards the development of higher standards, the ratification by member-states of all IMO conventions and the uniform application and monitoring of IMO, EU and ILO (relative to living and working conditions on-board) regulations across the EU (CEC, 2009d). A further domain of EU action concerns the economic sustainability and competitiveness of the EU maritime sector. The aim here is to ensure that a balanced and uniformly regulated fleet is capable of providing efficient transport services for the EU's socio-economic development, at the same time as it increases its competitiveness on the global scene. Key areas of intervention have been harmonisation of rules for state support to maritime operators, multi-modal integration through harmonisation of shipping with logistics chains on land and research and technological innovation relative to ship, port and multi-modal operations.

At national level, the current government policy for the sector largely emanates from the European common strategy. It was adopted at the end of 2006 with the title "Strategic guidelines for the maritime-port sector" (OESMP, *Orientações Estratégicas para o Sector Marítimo-Portuário*; Secretaria de Estado dos Transportes [SET-PT], 2006). Through this document, government pursues three main aims: i) to strengthen the so-called 'Euro-Atlantic centrality' of the country, that is, to promote maritime functions and services that take advantage of Portugal's position on Europe's Atlantic edge; ii) to increase the competitiveness of Portuguese port and shipping services; and iii) to assist in the establishment of competitive and sustainable transport networks in the country. To achieve these aims, a set of 'priority domains of intervention' is proposed, along which the OESMP is being implemented.

The first cluster of interventions pertains to the reorganisation of the institutional framework of the sector. The underlying principle is that the state, through the IPTM, should progressively abandon all commercial operations. In all ports it is also proposed to expand private concessions to all port operations, including services related to fishing and leisure activities, which, today, are commonly offered by port administrations themselves. Underlying are the aims of increasing competitiveness and improving service quality and efficiency, and, again, of separating commercial and regulatory roles. Finally, the first domain of intervention also alludes to the strengthening of advisory organs through which sector stakeholders may influence decision-making processes. This is not a completely novel proposal, as a consultative council has existed in the IPTM since its 1998 reform. However, while this earlier council only

dealt with sector-specific issues, the new advisory body appears to also address concerns of inter-sectoral and broader territorial nature.

The second domain of intervention is closely related to the first and concerns the legal underpinnings of port operations. It starts with the elaboration of the national maritime and port plan, intended to harmonise port development with other ocean and coastal activities. Despite an initial delivery date in 2008, as of January 2011 this plan had not yet been produced. A related measure, the production of sustainability reports by port administrations, has been more successful, with most major ports having begun issuing these in 2007. The new ports act, however, a key piece of legislation for enabling the envisioned port reform, has faced much more troubled waters (Carneiro, 2010). Following an exhaustive consultation process, a proposal was finalised by the IPTM at the end of 2008 (IPTM, 2009b) – one year behind the initial schedule (SET, 2006) – and presented to parliament in May 2009. Amidst sounding protests and a strike by stevedores, the bill was rejected on account of the allegedly insufficient time that opposition parties had had to analyse the document's lengthy list of provisions. The bill and the act have not been heard of since. Silence has also been kept on the proposal contained in the OESMP of revising the port labour regime, a sensitive issue not only in Portugal but also elsewhere in the EU (see Carneiro, 2010).

The third domain of intervention concerns improvements to port operations, predominantly in respect of information requirements and exchange, as well as administrative procedures. A key measure here has been the conclusion of a unified and simplified system for exchanging cargo-related information between different operators and authorities in the ports – the so-called 'unified port window' (*Janela Única Portuária*), discussed for over a decade and finally installed in all ports. Other projects have been developed on inter-modal integration and on the inclusion of Portuguese mainland ports in so-called EU 'motorways of the sea', although in this latter case with limited success (Anon, 2009; Stock da Cunha, 2010). Other measures included in this third domain pertain to fiscal and pricing regimes in ports, which largely have been dealt with as part of the broader reform of the public administration.

The fourth domain concerns maritime safety and security, a central component of which has been the conclusion of the vessel traffic monitoring system in the mainland. Extension of this system to the two archipelagos is currently being considered by the IPTM. The OESMP contains also a number of measures related primarily to the enforcement of existing safety and security requirements, as well as to preparedness and response to marine pollution events.

The fifth domain is addressed rather succinctly in the OESMP, something that contrasts with its strategic relevance and the size of the investments it carries. Relating to large-scale, capital-intensive investments in multi-modal and logistics infrastructure, it constitutes a fundamental step to "reverse decades of scant investment" in transport infrastructure (Anon, 2010) and enable more efficient integration of maritime transport into national, Iberian and ultimately European land- and air-based transport corridors. In line with government's logistics strategy – termed 'Logistics Portugal' (*Portugal Logístico*) – significant emphasis is placed on linking sea and rail transport. The scale and pace of investment has been considerable , especially in face of significant cuts in public spending in more recent years.[117]

The last domain of intervention concerns the granting of support to and involvement of state organs in research and development initiatives relative to maritime transport and ports, as well as training and education of seafarers. The former has comprised a variety of projects, ranging from new management and communication platforms, to equipment for producing wave energy. As regards maritime education, government aims not only at promoting seafaring careers – largely as a means of addressing the shortage of Portuguese officials - but also at diversifying the course offer so that future maritime careers are more flexible and responsive to labour market fluctuations and to employment opportunities on land.

The OESMP makes no mention to ship-building or -repair. To this author's knowledge there is no government strategy pertaining specifically to this sub-sector.

[117] For an overview of these investments, see Ministério das Obras Públicas, Transportes e Comunicações (MOPTC, 2009) and the yearly reports of the autonomous port administrations.

5.5 Marine and Coastal Conservation: a Case-study

This section discusses aspects of marine and coastal conservation initiatives in Portugal. After a brief overview of the national policy framework and of the different marine protected areas in the country, the specific case of the Luiz Saldanha Marine Park is analysed in some detail. This MPA was selected as a case-study because of the frequency and intensity with which the consequences of its establishment for other human activities in the area have been discussed and reported in the national media. No other protected area in Portugal has generated as much discontent as the LSMP.

This section adopts a different structure from that of preceding ones. Instead of the 'sector-policy' division, it is organised around the main issues underlying the mentioned discontent. Emphasis if placed on the distinct perceptions that different stakeholder groups have of these issues. A short overview of the policy and regulatory framework for nature conservation in Portugal and for the LSMP precedes the analysis of those issues.

5.5.1 Establishment of the LSMP: Background and Process

There exists no policy document dealing exclusively with marine and coastal conservation. Instead, the National Strategy for Conservation of Nature and Biodiversity (ENCNB, *Estratégia Nacional de Conservação da Natureza e da Biodiversidade*) is the umbrella instrument applicable to the whole of the Portuguese territory setting out the basic policy principles, objectives and lines of action in regards to nature conservation. A post-Rio instrument, the Strategy attempts to balance environmental protection with development of human communities through adequate, sustainable patterns of utilisation of natural resources (RCM no.152/2001). The related legal document stipulating the regime of nature and biodiversity conservation reaffirms the centrality of that balance in its first two principles, namely the principle of the social and public function of natural heritage, and the principle of sustainability and rational utilisation of natural resources (Decree-law 142/2008).

Mainland Portugal has at present four protected areas that include marine waters. These are the Arrábida Natural Park, the Littoral North Natural Park, the Natural Park of Southwest Alentejo and Vicentina Coast, and the Berlengas Natural Reserve.[118] Eight other conservation areas are

[118] Respectively, *Parque Natural da Arrábida, Parque Natural do Litoral Norte, Parque Natural do Sudoeste Alentejano e da Costa Vicentina* and *Reserva Natural das Berlengas.*

located on the coast, five of which centred around coastal wetlands. The Azores and Madeira have their own networks of protected areas, managed by the respective regional governments

The LSMP was formally established in 1998 through a Regulatory Decree that extended the boundaries of the Arrábida Natural Park – created in 1976 – to include a portion of the coastal waters to the south and west of the Arrábida mountains (Regulatory Decree no.23/98). An area of high marine biodiversity – including numerous commercially important species – and of recognised natural beauty, the coast along the Arrábida and around Cape Espichel has been the stage of intense and varied human use for many decades.[119] The concerns voiced over the years about the degradation of the marine environment and the perceived need to adopt measures to reverse it led to the 1998 decree. The final limits of the park were set in 2003 with the appendage of a couple of sites deemed of particular interest for conservation (Regulatory Decree no.11/2003).

The management plan was finalised and adopted by government in the summer of 2005. It entered into force on 24 August, with a transitional period of four years applicable to commercial fishing and some aspects of recreational boating. A wave of protests ensued, with large demonstrations and periodic maritime rallies that deliberately violated the park's regulations, prompting nation-wide media coverage, not only of the events, but also of the 'prepotency' and 'injustice' of the park's way of handling 'legitimate, historical claims' of the users of the area.[120] The latest in this series of large public demonstrations was held on 22 August 2010, signalling a further anniversary of the entry into force of the management plan. In parallel, opposition to the park's regulations assumed other, more discrete forms: opinion articles for and, more frequently, against the park appeared in the local press and in the cyberspace; individual users and sector organisations have discussed with the park alternative management measures and presented proposals to that end; and a multi-stakeholder forum (Fórum Sesimbra) has been established in the attempt to congregate the individual strength of the different voices against the park and to find ways of improving the management plan in favour of the users.

[119] The town of Sesimbra for example, located in the centre of this area, has been one of Portugal's historical fishing ports, and one with above-average value of landings (Ferreira, 2000).

[120] For a compilation of media coverage of the maritime rally held on the first anniversary of the POPNA, see http://www.naval-sesimbra.pt/work/newsletter/capa.pdf.

5.5.2 Elements of the Management of the LSMP

The POPNA is, in essence, a sea use plan. As an instrument for managing a system that is ecologically dynamic and subject to varied and intense human use, it was criticised for its rigidity by the commission that reviewed the draft proposal back in 2004 (Sousa Reis *et al.*, 2004). The fundamental tool for the protection of the marine environment is a zoning scheme that determines where different activities may or may not take place. On top of this there is a general interdiction of trawl fishing; spear-fishing; collection of marine species, including algae but excluding certain commercial fish species subject to specific licensing; dumping of wastes; use of jet-skis; commercial aquaculture; installation of ports, marinas and berths; and all actions that damage or alter the natural environment. Commercial fishing in the park is restricted to a total of 25 species – covering all commercial species – and to vessels of less than seven meters in length, subject to the issue of specific licences by the park's administration. Certain organised activities, such as SCUBA diving or maritime tourism, are equally dependent on the granting of specific licences. Additional fisheries-specific limitations apply according to the zoning scheme, which also sets the boundaries for leisure boating, sports fishing, and maritime tourism activities.

The zoning scheme itself considers three different types of protection levels, that apply to the eight zones that the park has been divided into (Figure 6). In the single total protection zone, all human presence is prohibited except for purposes of research, monitoring, surveillance and enforcement, and emergency, as well as in cases of so-called innocent passage at a distance greater than ¼ nm from shore. There are then four partial protection zones where "the maintenance of habitats and of certain species is compatible with temporary uses that respect the objectives of nature and biodiversity conservation." (RCM no.141/2005: p.4868, art.40-3.) In these areas permitted activities include recreational boating, although berthing is only allowed at distances greater than ¼ nm from shore; organised recreational activities, such as SCUBA diving; and commercial fishing with traps at distances greater than 200m from shore. In the partial protection zone around the village of Portinho da Arrábida, commercial fishing is not permitted at all, and additional restrictions apply to recreational boating. Finally, in the remaining three zones of complimentary protection, restrictions to berthing of leisure boats are abandoned, sports fishing is allowed, as is commercial fishing with nets at distances greater than ¼ nm from shore, with hook and line and with traps. In addition to this, in two beaches in

the Sesimbra bay, beach seining (*arte xávega*) is allowed when incorporated into tourism or cultural events.

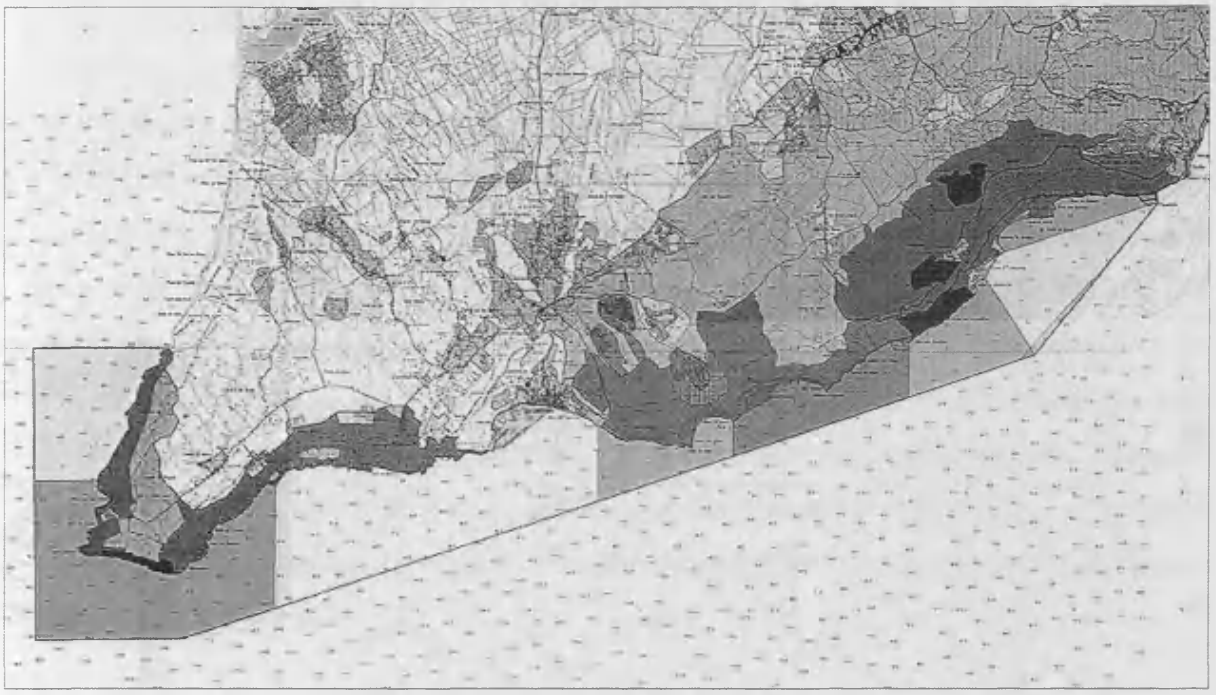


Figure 6 - Map of the Arrábida Natural Park, showing the zoning on land and at sea
(Source: RCM no.141/2005)
Note: At sea, darkest shade of grey represents the total protection zone, the intermediate shade of grey the partial protection zone and the lightest shade of grey the complementary protection zone.

There are currently about 80 active professional fishing licences granted by the park, a number that has remained unchanged since the POPNA entered into force in 2005. These licences have been granted exclusively to fishermen with boats registered in the port of Sesimbra, and can only be transferred or sold to direct relatives. Transfer or sale to non-direct relatives can only occur in cases of prolonged and confirmed illness. The annual renewal of licences is dependent upon a minimum of 100 landings registered at the local official Docapesca fish auction.

Finally, it is instructive to consider that the objectives of the LSMP are not restricted to nature conservation and restoration. Instead, in line with the ENCNB, they also include the promotion of socio-economic and cultural activities when carried out in ways that are deemed sustainable and that contribute to the conservation objectives of the park. Two proposed avenues are the establishment of nature-based tourism activities and the promotion of local products certified for their quality and origin. In regards to the former, the record so far has been mixed: while the

conservation status does help attract people to the area because of its natural attributes – helping sustain the operations of an estimated 50 tourism operators active in the Arrábida park at the end of 2009 - tourism operators all too often have to deal with burdensome requirements relative to carrying capacity of the area, as well as to restrictions to activities in different parts of the park (J. Saleiro, pers.comm.).[121] Legislation prohibiting fishermen to carry tourists on board their boats has so far prevented fishermen to associate tourism to fishing. Such activities could contribute to minimising losses from restricted fishing opportunities, at the same time as it would provide tourists with an opportunity to learn about fishing traditions in the area (M. Henriques, pers.comm.).[122] As for the certification of local products, this is problematic for fishery products given the impossibility of ensuring that what is caught inside the park effectively *is* from the park. An alternative might be to certify and subsequently promote certain fisheries as conforming to conservation and sustainability requirements, an approach similar to that of Marine Stewardship Council certifications. So far, no steps towards such certification have been taken.

5.5.3 Stakeholder Involvement in Management Deliberations

The perception is held by many that the consultation process during the elaboration of the POPNA was less than optimal. Among several user groups the feeling persists that participation was meaningless, because although people had formally been given the opportunity to present and discuss different proposals, the proponents of the park showed little or no regard for these proposals and went ahead with a regulation to which stakeholders' input was minimal (C. Macedo; R. Santos; CM Sesimbra; J. Pinto, pers.comm.; Sousa Reis *et al.* 2004).[123]

This perception persists to this day among former and current users of the park, having led to three distinct reactions: some have attempted to bypass the park's authorities and have presented their claims directly to higher instances, from the state secretary and the minister of

[121] José Saleiro, Association of Maritime Tourism Operators of Sesimbra (ACOMTS), personal communication on 10 December 2009, Sesimbra, Portugal.

[122] Miguel Henriques, ICNB – Arrábida Natural Park, personal communication on 18 November 2009, Setúbal.

[123] In this regard, Cabral and co-authors (2008) maintain that the forceful opposition by the fishermen show that the implementation of the marine park was not done properly, and that socio-economic and cultural aspects of the people affected were not duly considered.
Carlos Macedo, Artesanalpesca, personal communication on 18 November 2009, Sesimbra; Ricardo Santos, Sesibal, personal communication on 20 November 2009, Setúbal; Câmara Municipal de Sesimbra, personal communication on 20 November 2009, Sesimbra; Jó Pinto, Zuca Sport Fishing Club, personal communication on 21 November 2009, Sesimbra.

environment, to the president of the parliament and the president of the republic, the two highest representatives of the Portuguese state (A.J. Cruz, pers.comm).[124] Others continue to operate within local user organisations – chief among which Fórum Sesimbra – trying to generate a critical voice sufficiently strong to force the park to alter the POPNA (J. Lopes, pers.comm.).[125] Finally, a smaller number of users has given up out of sheer disbelief in any possibility of change.

The park's authorities share little of these views. While they recognise the discontent of certain user groups with the current management plan, they do not understand why matters of participation and agency play a significant role in this. The pre-2005 consultation is considered to having been a suitable avenue for beneficial interchange between the park and user groups, despite the recognition that some of the larger, open public hearings were of limited usefulness. The approved POPNA is thus said to contain a number of provisions where conservation objectives were compromised in favour of certain human activities (see Sousa Reis *et al.* 2004). Post-2005 alteration of the management plan has so far been conditioned by two aspects: firstly, a legal impediment of revising the plan within the first three years upon gazetting. Secondly, the argument that sufficient time has not yet passed since the management plan entered into force and that, consequently, its actual virtues or shortcomings in terms of both conservation and socio-economic objectives are not yet measurable. This argument is supported by evidence from other marine conservation initiatives, where it has been found that, depending on local socio-ecological aspects and on the level of ecosystem degradation, marine species may take several years to recover from intense and prolonged anthropogenic stress (Sweeting & Polunin, 2005; Claudet *et al.,* 2008; Molloy *et al.,* 2009). In the LSMP, preliminary results suggest some recovery of commercial fish species, primarily inside the total protection zone (Centro de Ciências do Mar [CCMar], 2010). As for socio-economic impacts of the establishment of the park, there is, to this author's knowledge, no monitoring programme in place. A recent contribution by Batista and co-authors (2011) confirms this observation, adding that, on the whole, the socio-economic condition of fishermen has deteriorated with the establishment of the MPA.

[124] António Júlio Cruz, Clube Naval de Sesimbra, personal communication on 18 November 2009, Sesimbra. Some of this lobbying has recently led one of the opposition parties to submit to parliament a resolution requesting government to review some aspects of the management of the Arrábida park. See, to this end, Grupo Parlamentar do CDS-PP, 2010.

[125] João Lopes, personal communication, n.103.

5.5.4 Perceived Causes and Consequences of Marine Environmental Degradation

The creation of the LSMP was motivated by the belief that imposing a more stringent regulatory framework on human activities would preserve pristine ecosystems and enable the recovery of habitats and species not yet subject to irreversible anthropogenic damage (RCM no.141/2005). It was hereby implied that the different human activities were the cause of the observed degradation of the marine environment. This understanding is shared up to this day by most, if not all of the park's stakeholders (M. Henriques; R. Santos; J. Narciso & A. Rafael; ANARESE, pers.comm.)[126]. It is in the interpretation of the relative contributions of those activities to that degradation that disagreements appear.

Fisheries is the number one source of degradation according to most, including many fishermen themselves (see Cabral *et al.,* 2008). However, while the scientific community, the park and most recreational users point the finger at commercial fishing, professional fishermen tend to see things differently. It is worth noting here that professional fishermen, even in a relatively small community like Sesimbra, do not form a single, homogeneous group.[127] Fisheries are clearly divided by type of boat and gear used, and by fishing area. These divisions are also manifested in the formation of different groups of fishermen. Among themselves, some of these groups exchange accusations of responsibility for the depletion of fish stocks. When attacked from the outside by non-fishermen, a certain unity emerges in blaming either pollution or sports- and spear-fishing, neither of which are subject to the same level of control by the authorities as commercial fishing. Cabral and co-authors (2008) report, in this regard, that most fishermen believe that the largest negative impacts for the marine environment arise either from activities other than fishing, or from fisheries using gears that they themselves do not use. Earlier findings indicate that fishermen acknowledged the need to restrict (at least some) fishing activities to allow for the recovery of marine ecosystems in the park (Sousa Reis *et al.,* 2004; Cunha, 2008).

In regards to pollution, it is primarily professional fishermen who stress the pervasiveness of its negative impacts, although groups of recreational users also refer to it (see Sousa Reis *et al.,* 2004; Cabral *et al.,* 2008; MARGOV, 2009a, b). It is noteworthy that a matter that should be

[126] Miguel Henriques, personal communication, n.122; Ricardo Santos, personal communication, n.123; João Narciso & Arsénio Rafael, Associação de Armadores da Pesca do Centro e Sul, personal communication on 20 November 2009, Sesimbra; ANARESE (Recreational Boating Association), personal communication on 21 November 2009, Sesimbra.

[127] For a characterisation of the fishing community in Sesimbra, see Ferreira (2000) and, especially, Cruz (2009, [1966]).

relatively straightforward to demonstrate unequivocally is the source of considerable dispute between groups of stakeholders. The scientific view, shared by the park is that all pollution originating from the estuary of the Sado river situated east of the LSMP is pushed by prevailing currents and winds southward along the Atlantic coast of the Tróia peninsula. A set of sandbanks on the eastern edge of the park further blocks any of this pollution from affecting the park's waters. Since no important sources of pollution exist within the park, it is in effect shielded from the only major source in the region, except in those rare occasions of south-southwesterly storms. Those arguing for the centrality of pollution in marine environmental degradation claim that this explanation is incorrect, and affirm that pollution from the Sado all too frequently reaches the eastern third of the park, including the only zone of total protection. The park counters that if this were the case, ecosystems would be affected as a whole, while in reality it is primarily species targeted by fisheries that show signs of decline. The preliminary results mentioned earlier and which suggest an increase in biomass of commercial fish species in the total and partial protection zones appear to support this thesis (CCMar, 2010; see also Cunha, 2010). Since the POPNA was adopted, significant restrictions have been imposed on fisheries, whereas pollution has remained unaltered; should pollution be the culprit for species decline, then no recovery would in principle be detected.

5.5.5 An Adequate Regulatory Regime?

Most stakeholder groups are of the opinion that the LSMP is a good thing, and that it is necessary for reversing the path of degradation that was evident in the area (see Gonçalves, 2005; Cabral *et al.* 2008).[128] Simultaneously, similar unanimity has developed in condemning the POPNA as the means to that end. The shared perception is that the current management plan, despite all the restrictions it imposes on human activities, is doing nothing in terms of protection or recovery of ecosystems. This perception may be justified by the fact that, while restrictions on human activities began to be felt from day one, ecosystems' responses not only take much longer, but also are much more difficult to discern. In other words, there is a time gap between (immediate) costs and (delayed) benefits.

Apart from the generic mistrust against the POPNA, each user group has its own specific disagreements with elements of the management plan. Professional fishermen oppose the spatially-based zoning scheme, arguing that species- or gear-specific regulations would go

[128] All individuals interviewed by the author for this case-study were in agreement with the establishment of the LSMP. See footnotes n.121-124, 126.

much further in terms of both protecting biodiversity and allowing the maintenance of acceptable levels of fishing. Fishermen who saw their gear types banned from the park's waters have tried to argue for the selectivity and environmental friendliness of the gear in attempts to returning to former fishing grounds.[129] To those fishermen allowed to fish within the park, exclusion from the zones of total and partial protection has meant overcrowding in the complementary protection zone, increasing the potential for conflict over fishing grounds customarily used by others (see Cabral *et al.* 2008; MARGOV 2009a; Batista *et al.*, 2011).

An important cause of discontent among professional fishermen is the park's licensing regime for commercial fisheries. In 2005, approximately 80 licences were granted, a number that the park considers too high for a marine protected area. This in turn justifies why no additional licences have since been granted. But, if the effort is excessive with the 80 licences, it is all the more surprising that 100 catches be required every year in order to renew a licence. This figure is deemed excessive by most fishermen. Indeed, the formal requirement is that fishermen register 100 yearly sales at the local fish auction. Considering that this auction only takes place on week-days, and discounting both the number of days where weather conditions do not allow for fishing, and the number of catches too small to justify sale at the auction, that figure is not easy to attain. In fact, fishermen complain that it is often impossible (J. Narciso & A. Rafael, pers.comm.).[130] Because licences will be lost if not renewed every year, fishermen often forge fake sales in order to reach the required 100.

All other user groups also oppose the rigid spatial restrictions of the zoning schemes of the POPNA. While some may recognise their value as means of keeping commercial fishing away from certain areas, most complain about having lost access to areas used in the past, be it access to beaches and certain sites along the coast, or sports fishing grounds (A.J. Cruz; J. Pinto; ANARESE; C.M. Sesimbra, pers.comm.; see also Cabral *et al.*, 2008).[131] Preference is given to regulations specific to each activity, instead of the current one-size-fits-all zoning.

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[129] This is the case of seiners targeting small pelagics (primarily European pilchard, and horse and scud mackerel). With the park's zoning scheme, they not only lost access to an important fishing ground in the complementary protection zone off Sesimbra, but also were pushed further offshore to deep waters where seining is not viable (Ricardo Santos, personal communication, n.123). The seiners cooperative (Sesibal) has since filed several attempts with the park and the ministry of environment to demonstrate the sustainability and selectivity of their capture methods, so far without any success. Ironically, Portuguese pilchard seine fisheries are to 95% certified by the Marine Stewardship Council, being the only fishery in the country to have been awarded certification by this organ.

[130] João Narciso & Arsénio Rafael, personal communication, n.126.

[131] António Júlio Cruz, personal communication, n.124; Jó Pinto, personal communication, n.123; C.M. Sesimbra, personal communication, n.123; ANARESE, personal communication, n.126.

5.5.6 Reflections on an Unstable Balance

The LSMP is Portugal's most poignant illustration of a difficulty faced by most protected areas: the striking of a balance between immediate and concrete costs borne predominantly at local level, and diffuse, mainly long-term benefits accruing to a wider, yet largely anonymous population. Recently a resolution was passed in the Portuguese parliament stating that the residents of protected areas are the "first and foremost targets of public policies for natural parks" (Resolution of Parliament no.118/2010, p.5105, II-1a). On the other hand, national conservation policies in Portugal and elsewhere are strongly conditioned by broader national interests and, increasingly, by international requirements. The 'targets' that the resolution refers to are thereby multiplied beyond the small circle of local residents. In this situation, is it correct that these residents are the first and foremost targets of those policies, and is it justifiable that they hold all other interested parties to ransom in respect of the future of a given protected area?

With no unequivocal evidence yet published, the LSMP appears to be a case where most former user groups – in particular commercial fishermen – stand to lose from the establishment of the park. Batista and co-authors (2011), despite lacking convincing evidence, hint at a decrease in fishing profitability resulting from the loss of fishing grounds and overcrowding in permitted areas. This author found a more complex situation, with starkly conflicting views on fish abundance and fishing opportunities, on potential benefits from the (already visible?) recovery of commercial species,[132] and on the relative importance of forces other than park regulations for the status of the different activities in the park area.[133]

In respect of negative impacts directly attributable to the POPNA, could it be that today's costs will be compensated by tomorrow's benefits? What would a correct approach be for the respective distribution? The mentioned parliamentary resolution asserts that those carrying the

[132] The park administration said that fishermen are already taking advantage of species recovery happening inside the park by fishing immediately outside its limits, thereby benefiting from short-range spillover effects (Miguel Henriques, personal communication, n.122).

[133] For example, one interviewee maintained that the key impediment to fishermen having higher earnings from fishing is rather their lack of involvement in post-capture commercialisation than impediments from area regulations. This lack of involvement leaves them at the mercy of intermediaries that keep most of the profit there is to make from the large difference between producer and consumer fish prices, of which fishermen typically have no benefit (João Lopes, personal communication, n.103; see also Conselho Económico e Social, 2008). In another example, relative to recreational boating, while several interviewees blamed the spear-fishing ban of the POPNA for the disappearance of a large share of recreational and sports-fishing vessels from the Setúbal-Sesimbra coast, a recent article argued that the 15% reduction in the number of leisure boats nation-wide between 2009 and 2010 alone resulted primarily from families' decision to cut down on non-essential spending in response to the economic crisis (Ferreira, 2010).

cost for the establishment of protected areas should be duly compensated by the state. This assertion is not altogether absurd: after all, in a society aiming at social equality, this would be a means of diluting the costs among the anonymous many that stand to benefit from those areas. And, in effect, taxpayers do already support numerous compensations for losses resulting from public policies, those mentioned earlier for fishing fleet conversions and capacity reduction being just two nearby examples. Nonetheless, however justifiable 'in principle', it is highly improbable in the present Portuguese context of extreme public debt and severe cuts in public spending that such compensations will see the light of day. If they ever do, in a more or less distant future, it is questionable that they will be of much assistance to those professionals who, at present, are facing difficulties in securing a livelihood from the waters of the LSMP.

5.6 A Portray of Social Conditions in Portugal

The latest statistical figures, relative to 2008, indicate that close to 18% of the resident population in Portugal is at risk of monetary poverty, corresponding to approximately 1.8 million people.[134] This figure is higher for children and the youth (≤ 17 years old), at 22.9%, as well as for the elderly (≥ 65), at 20.1%. Women face a higher risk in all age categories relative to men, this difference reaching 4.1% in the age group above 65 (INE-PT, 2010e). With a value of GDP per capita of approximately 80% of the EU-27 average (INE-PT, 2011), Portugal is also one of the EU members with the lowest at-risk-of-poverty threshold, which in 2008 amounted to 4,969 Euros per annum (INE-PT, 2010e). As is the case in most European countries, monetary poverty is more prevalent in households with a larger number of dependants and with lower levels of work intensity.

In the EU context, Portugal is not only poor, but also very unequal, ranking fourth in terms of income inequality – after Latvia, Romania and Bulgaria – with a Gini index of 35.8%, 5% above the EU-27 average. Despite the downward trend observed in income inequality since 2004,[135] the average income of the richest population decile is still over ten times that of the poorest decile (INE-PT, 2010e). In addition to its pronounced inequality, Portugal is also characterised by high levels of poverty persistence and intensity, aggravated by low mobility of incomes and of poverty statuses, resulting in a magnitude of chronic monetary poverty higher than that of its European partners (Ferreira, 2005).

Unemployment has become a particularly grave problem in the past three years, the respective rate having risen from 7.8% at the end of 2008 to 10.9% of the active population at the end of the third quarter of 2010, corresponding to approximately 609.400 individuals (INE-PT, 2010b).Although employment rates are relatively high in the context of the EU, employment alone does not necessarily eliminate vulnerability to poverty, with approximately 12,5% of the employed population earning two thirds or less of the average gross income (Ministério do Trabalho e da Segurança Social [MTSS], 2008).[136] Capucha and co-authors (2005) have identified the low levels of formal education and training, and the prevalence of traditionally

[134] Poverty measured in relation to income and after all social transfers. A person is considered at risk of monetary poverty if the available income per adult-equivalent falls below 60% of the national median value. Before social transfers the incidence of this risk is a staggering 41.5%.

[135] The Gini coefficient decreased from 38.1% in 2004 to 35.4% in 2008.

[136] The EU Joint Report on Social Protection (CEC, 2009b) refers that employment *per se* is not enough to promote social inclusion, recalling that 11% of the employed population in Portugal is considered poor.

rigid forms of contractual labour relations as two important aspects preventing the transition of Portugal to a more productive, dynamic and competitive production system. Intensive and low-skilled labour is still prevalent in the country, according to the same authors, where the primary sector still employs around 11% of the active population (INE-PT, 2010d). On that matter, a recent review of the social situation in the EU maintained that "[i]mproving the education system is paramount to improving economic performance" in the country (CEC, 2009b, p.432).

In the domain of education, the country has historically been plagued by very high early drop-out rates, estimated at 31.2% in 2009, higher for boys (36.1%) than for girls (26.1%) (INE-PT, 2010d). The 10% reduction in the aggregate rate between 2003 and 2009 attests to important progresses achieved in this domain in recent years. Education attainments are relatively low, with only slightly more than half of all young people of ages 20-24 having completed high school. As of 2007, only around 14% of the employed population had completed higher education (INE-PT, 2008b).

Important gender inequalities are still visible in terms of education attainment and labour relations. Although women make up close to 60% of all higher education graduates in Portugal (university and equivalent; INE-PT, 2010d),[137] illiteracy is still more frequent in women than in men of ages 50 and above. As for participation in the labour market, despite a relatively high proportion of employed women, women tend to occupy posts in the services sector that are less well remunerated, resulting in, for example, a 20% lower salary on average for graduated employed women relative to similarly qualified men.[138] Capucha and co-authors (2005, p.92) note that "[...] although highly qualified, women continue not having access to decision-making posts, nor to those of greater social and professional prestige." These authors note also that women are more affected by long-term unemployment than men. Gender disparities in Portuguese society are further described in the latest National Plan for Gender Equality in the following manner: "Recent statistical data demonstrate the persistence of a weak representation by women in decision-making, as well as the intensification of evidence of violence against women, of their greater vulnerability to poverty and social exclusion, of precarity in labour and of inequitable allocation of family and domestic responsibilities" (RCM no.82/2007, p.3950).

[137] This figure was higher, at approximately two thirds, until 2006. The relative decrease has mainly been due to a surge in male enrolment in the three years since.

[138] Instituto Nacional de Estatística, Portugal. Statistical data, Database, Education and learning, Academic qualifications, <www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_base_dados>.

An important aspect when considering poverty and social exclusion in Portugal is territorial asymmetries. GDP per capita, for example, varies between 65% of the EU average in the North of Portugal, 77% in the Azores and 110% in the Lisbon Region (INE-PT, 2011). A more complete picture is given by a 2005 study by the Social Security Institute, proposing a typification of social exclusion situations in Portugal, based on indicators of demography and migration, education, labour, housing conditions, monetary income, disability levels, criminality and social protection (Instituto da Segurança Social, 2005).

The authors classified the vast majority of municipalities in the interior, along with with a handful of littoral municipalities in the south-west of the country as either "Type 4 – Aged and deserted territories" or as "Type 6 – Aged and economically depressed territories". Positive aspects of social inclusion comprise, for the first type, low levels of criminality, good housing conditions and good supply of social services, whereas for Type 6 territories the only positive aspects are low criminality and, to some extent, the low percentage of immigrants, which might be said to facilitate social cohesion. Social exclusion, on the other hand, manifests itself in Type 4 territories in the form of ageing population, loneliness of the elderly, illiteracy, diverse disabilities and a large imbalance between pensioners and employed individuals. In Type 6 territories social exclusion is shaped along the lines of deficient family integration – for example, lone old age individuals or families of only grandparents and grandchildren, insufficient schooling, lack of integration in labour markets and monetary poverty, with high incident of recipients of the minimum social allowance and generalised very low pension levels. Of the 123 municipalities typified as either Type 4 or Type 6, 112 were classified as rural by the same authors. Together, those 123 municipalities, although representing almost 45% of the area of mainland Portugal, account for less than 13% of the total resident population.

An alternative view on social exclusion, focusing more on causes than on territorial manifestations is offered by Capucha and co-authors (2005). These authors propose four distinct categories of social vulnerability, built upon the mechanisms through which individuals or groups are excluded or exclude themselves from society. The first such category comprises those people who, at the eyes of society, possess a specific handicap preventing their full participation in social life. Such perceived handicap might be based on prejudice. People with physical or mental disabilities, as well as immigrants are included in this category. Among the disabled one observes higher illiteracy and unemployment. Over 70% of the disabled are

economically inactive, the main source of income being social pensions (MTSS, 2008). Immigrants, who represent about 9% of the active and 4.5% of the total resident population in the country (RCM no.63-A/2007), have in most cases lower education levels and thus tend to have less qualified and less well paid jobs.

The second category of social vulnerability includes individuals with lower levels of education and professional qualification, who typically are at a disadvantage in the competitive labour market. Lone parents with children are found in this category, as they often lack the financial capacity to invest in their own training. In most cases, these parents are women. The long-term unemployed are a further group in this category, usually consisting of older, less qualified individuals with limited financial means to invest in additional training. The authors note that long-term unemployment "not only tends to [...] erode professional aptitudes, but also leads to progressive dilution of social habits and bonds of every-day life" (Capucha *et al.*, 2005, p.123).

The third of Capucha's categories encompasses individuals and families in persistent poverty in what are called "circles of installed poverty". This designation is applied to situations of long-term poverty, with a clear territorial demarcation and that tend to persist over generations. This categorisation places particular emphasis on the impacts that degraded environments and established social relations exert on individuals, tying them to poverty through accommodation, adaptation and "oppressive retention" (Capucha *et al.*, 2005, p.119). As was discussed above, many territories in the interior of Portugal possess such characteristics. The elderly, often alone and with very low incomes, are particularly vulnerable to this type of exclusion cycles, as are children, because of their typically very limited ability of moving out of poverty by themselves.

The fourth and final category is made up of individuals unable to fit into the prevailing social norms. The homeless, those suffering or having suffered from substance addictions, current and former prison inmates, as well as street children and members of youth gangs are included here. It is not known how many homeless people there are in Portugal. What is known is that the typical homeless person is a man of Portuguese nationality of ages 30 to 49, single or divorced, with only basic-level education and residing in the metropolitan areas of Lisbon and Oporto (MTSS, 2008). Many suffer from mental disorders, are substance-addicted and are former convicts. In all cases they are impaired in their ability to reconstruct their social lives and have virtually no social, psychological and economic support.

5.7 Government Strategies for Social Inclusion and Employment

Within the EU framework for combating social exclusion, Portugal has produced in the last decade a series of so-called National Action Plans for Inclusion (PNAI, *Plano Nacional de Acção para a Inclusão*), the latest version of which covers the period 2008-2010. Together with the National Action Plan for Employment (PNE, *Plano Nacional de Emprego*), the PNAI is one of government's key instruments for addressing Portugal's social problems and the one explicitly addressing issues of poverty and social exclusion.

It should be noted, at the outset, that none of these plans contains any proposal specific to the ocean sectors. The fact that not even fisheries, the socio-cultural importance of which is generally acknowledged, is subject to any specific treatment suggests that there are no poverty or social exclusion issues specific to population groups in these sectors that are salient enough to justify dedicated measures in any of those plans. Despite this fact, a brief overview of the contents of these action plans is useful for understanding the government's approach to improving the country's social conditions.

Starting with the PNAI, the higher level strategy of which it is part defines six objectives grouped into two priority areas (MTSS, 2008). The first area concerns the impacts of demographic changes on society and individuals, and includes the following objectives: i) to support child birth and infancy; ii) to support the conciliation of professional, personal and family life; and iii) to promote active ageing and to prevent, but also support dependency. The other priority area, relative to the promotion of social inclusion and equality, groups the remaining three objectives, to wit: iv) to promote active social inclusion; v) to improve living conditions in disadvantaged and vulnerable environments and territories; and vi) to facilitate the inclusion of disadvantaged population groups.

As elements of a broader strategy, to each of these objectives concur a variety of measures from different policy areas. For example, supporting child birth and infancy involves measures dealing with social transfers to new parents, the provision of sufficient and adequate child care facilities, and the revision of traditional gender roles in family and society, which, in turn, implies changes to parenting leave regulations and awareness creation among employers, typically less keen on losing male workforce to parenting. Reviewing all these measures is beyond the scope of this discussion, more so because none is specific to any of the country's

ocean sectors, and hence shall not be discussed further here.[139] Exception is made to the measures pertaining to social inclusion, addressed in the PNAI, as these constitute government's response to problems of social exclusion and poverty.

As alluded to earlier, the 2008-2010 PNAI follows from earlier plans; in relation to the 2005-2007 plan, it very much adopts similar priorities, which, according to the EU 2009 Joint Report (CEC, 2009b, p.434), are "consistent with the current social situation" of the country. These priorities address the key aspects affecting social inclusion in Portugal, namely monetary poverty among children and the elderly; lack of school attainment and early school drop-out; low skills and educational levels; very low participation in life-long learning; info-exclusion; and inequality and discrimination of immigrants and disabled people in their access to fundamental rights.

The first priority is to "fight poverty among children and the elderly, through measures ensuring their basic rights of citizenship" (MTSS, 2008, p.30), and includes a variety of interventions directed not only at these two target groups, but also at wider family and social environments. Low incomes are compensated for by social transfers, and by promoting integration of individuals into the labour market. There are a number of measures, many of which ongoing, pertaining to improving the housing situation of the poor, involving programmes for the rehabilitation of degraded homes and for facilitating access to housing of adequate standard for people with lower incomes. Education and counselling regarding household income management are also included under this priority area. The EU Joint Report (CEC, 2009b) highlights the positive multiplier effect of several of the proposed measures. For example, improvements in social infrastructure for child care facilitates the participation of women in the labour market. As with the remaining two priorities, the specific measures under priority one – both implemented and planned – are listed in the PNAI, with accompanying indicators and (largely numerical) targets for evaluation.

Priority two aims at "correcting disadvantages in education, training and qualification" (MTSS, 2008, p.44), all of which are domains where Portugal lags far behind EU averages (see CEC, 2009b, c). A large number of structural interventions have been carried out in the past five to six years, pertaining to the establishment of pre-school infrastructures, revision of school

[139] An overview of such measures can be found in MTSS (2008). The evaluation of this strategy, due at the beginning of 2009 but, as of January 2011 still to be published, shall contain a more comprehensive narrative of what measures have actually been implemented, as well as of the respective results (see CEC, 2009b).

curricula and reorganisation of school administrations. While work is expected to continue on all these fronts, the PNAI 2008-2010 proposes to expand the opportunities for older students and working adults to diversify and validate their competencies through alternative curricular paths and adult education and skills certification programmes. For example, in the much-debated *Novas Oportunidades* (New Opportunities) programme, by April 2010 the number of adult applications had exceeded one million, with close to 400,000 12th grade-equivalence certifications (Ministério da Educação & Ministério do Trabalho e da Segurança Social, 2010). There is also a cluster of measures pertaining to improvements to information and communication technologies in schools and in disadvantaged territories, addressing both infrastructures and equipments, and education and training in the use and development of such technologies.

The third and final priority area of the PNAI combines measures aimed at "overcoming discrimination, strengthening the integration of specific groups, such as the disabled, immigrants and ethnic minorities" (MTSS, 2008, p.49). In addition to these three groups, homeless people are also targeted by a couple of measures, intended on one hand to individually assist the homeless with reinsertion in society, and on the other to improving state response to homelessness through better knowledge of the phenomenon. In respect of the disabled, the plan addresses issues of access to goods and services, namely the school system; social transfers to disabled individuals and their families; training and skills development for integration into the labour market; and legal support to ensure adequate access to and defence of individual and social rights. Measures targeting immigrant populations fall largely within the same categories, with emphasis on integration centres, language proficiency and support to entrepreneurship. The key ethnic minority targeted by the plan are the Roma, of which an estimated 40-50,000 reside in Portugal (MTSS, 2008). Here the challenge is not only to promote active social integration of Roms – in particular of children and young people – but also to create understanding and acceptance among the wider population for the specificities and needs of this group.

One final aspect, relative to the cross-sectoral integration of the PNAI is worth mentioning. In order to mainstream social inclusion into "public policies and the heart of political action" (MTSS, 2006, p.59) and to enable better evaluation of the implementation of the plan, so-called 'Sectoral Assessment Focal Points' (*Pontos Focais Sectoriais de Acompanhamento*) have been created with the ministries responsible for public policies in the areas of the economy,

employment, education, social action, health, culture and environment (MTSS, 2008). No such focal point operates in the ministry responsible for fisheries, which is all the more surprising given the facts that this same ministry also deals with agriculture and rural development and that social exclusion and poverty plague large tracts of Portugal's rural areas.

The National Action Plan for Employment (PNE) is another of government's key instruments for fighting poverty and social exclusion in the country. In the words of its authors, "employment constitutes a fundamental element for promoting quality of life and for social integration of all individuals, in particular those who find themselves in less favourable situations" (GEP, 2010b, p.44). The PNE consists of a wide array of measures contained in a number of government programmes relating not only directly to employment, but also to other domains that indirectly have a bearing on employment, such as health care and social protection. A comprehensive analysis of the plan is clearly beyond the scope of this discussion; what is attempted here is to present the main lines of government action in terms of supporting employment for the purpose of reducing poverty and social exclusion.

Based, in part, on the discussion in the preceding section, the labour market in Portugal relative to its EU partners may be condensed in the following statement: a country with above-average activity, employment, but also unemployment rates, with higher labour costs, but with significantly lower productivity and wages (respectively, 70% and 60% of EU averages), with a higher proportion of working poor and stagnant levels of wealth generation (see GEP, 2010b, p.18; INE-PT, 2011). In all these dimensions - excepting unemployment, where the situation deteriorated markedly in the last five years – Portugal has remained largely stationary relative to the EU, thus failing to converge after 25 years of EU membership.

Low productivity, coupled to traditionally low levels of technological development and innovation, results to a considerable extent from a "structural deficit in qualifications of the Portuguese population" (GEP, 2010b, p.27), which justifies the centrality of measures pertaining to education and skills development in the PNE. Grouped under the first priority area of this plan, these measures aim generically at preparing that population for the requirements of a globalised knowledge society, building the bases for and encouraging life-long learning. Four domains of intervention have been chosen, to wit: the New Opportunities programme, mentioned above, intended to assist young people in pursuing higher educational levels and adults in strengthening formal knowledge and validating their attainments; the reform of professional training, involving mainly a harmonisation of existing programmes and

a revision of certification methods and levels; the reform of the middle- and upper-school levels, with the underlying aims of improving educational attainment and combating early school drop-out; and the reform of higher education, involving the adoption of the Bologna process and other legislative changes, and the expansion of social support to students.

The PNE's second priority area concerns the creation of employment, the prevention of unemployment and the modernisation of social protection systems. The first comprises public-private initiatives for expanding employment opportunities, as well as for promotion of entrepreneurship among the unemployed. Unemployment prevention has involved direct interventions for social and professional inclusion of unemployed immigrants, professional training and employment of people with disabilities and the creation of a variety of professional internship programmes to enhance career mobility and acquisition of novel skills. Social protection systems have suffered important reforms to ensure their sustainability in the context of an ageing population, involving a revision of contributory regimes, the sharpening of enforcement measures and support to defaulting citizens. In view of combating monetary poverty, social grants have been continued and in some cases expanded – such as in the case of unemployment subsidies - and a transfer scheme specific for the retired elderly has been created, alongside financial aid schemes covering health care costs. In this domain the PNE points towards measures included in the PNAI.

The third and final priority of the PNE is the conciliation of flexibility and security in the labour market. This has largely come about in the form of the new labour code, which, while attempting to render the contracting and dismissal of employers less cumbersome, also focused on eliminating situations of persistent labour precarity and on preparing individuals for greater mobility and flexibility in the labour market. There are also measures intended to facilitate and regulate negotiations between employers and employees under the revised code, as well as a dedicated strategy for safety and health at work.

To finalise, it is relevant to observe that following the financial and economic crisis of 2008-2009 and the subsequent escalation of Portuguese public debt, government has adopted a multi-year austerity programme. All areas of public policy have been affected by important budgetary reductions and in cuts in salaries, pensions and different social transfers. Hence the programmes just reviewed remain largely in existence, but some with significantly reduced funds.

5.8 Poverty Reduction Contents of Portuguese Ocean Policies

Despite the frequent recognition of the social importance of Portuguese fisheries, no comprehensive study has yet been conducted on poverty or social exclusion in fishing communities. Could it be that poverty is not sufficiently prevalent in these communities to justify such concern? Or that fishermen are simply too few? In the context of the whole country, a fishing population of around 17,000 is certainly not very relevant, and the poor in that population are certainly a drop in the ocean of close to two million poor in Portugal. Here one arguably finds the reason why maritime populations in Portugal – of which the fishing population is by far the largest – do not feature prominently in the national poverty and social inclusion programmes. Even in Sesimbra, a town whose existence has always been linked to fisheries, the local social studies office has never produced any analysis of living conditions among its fishermen (C.M. Sesimbra, pers.comm.).[140]

Could it also be that the perception prevails that certain levels of deprivation are inherent to being a fishermen or a fish vendor? And does this perception lead to the belief that fishermen, because they choose their profession, bring that deprivation upon themselves, that they somehow are to blame for it (see Capucha, 2005)? This could explain why being a fishermen is regarded more with awe – for their bravery in facing the dangers of the sea – than with respect, with fishing communities usually characterised by some degree of social (self-)exclusion (see Ferreira, 2000). Some elements of that deprivation are worth reviewing here.

There are mixed data regarding earning from fishing. While small-scale fishermen might not earn the equivalent to the minimum salary – currently at 485 Euros per month – some fishermen in Sesimbra were said to be making close to 3,000 Euros per month (C. Macedo, pers.comm.).[141] On the other hand, it is not uncommon for retired fishermen to apply for sports fishing licenses in order to continue fishing, thereby topping up their meagre pensions. Situations like these indicate not only – and not necessarily – low earnings, but also past inability or unwillingness to make social security discounts. As is the case in CV, Portuguese fishermen are not known for their savings.

A particularity with income from fishing is its level of uncertainty, largely related to weather and resource availability, to which small-scale fisheries are especially vulnerable. Recall, from

[140] C.M. Sesimbra, personal communication, n.123.
[141] Carlos Macedo, personal communication, n.123.

the LSMP discussion, that the fishermen's opposition to the licensing regime in the park has to do with the 100-landings requirement, which the often fail to fulfil. Given fishermen's reluctance to diversify into other professions, a common way of coping with that uncertainty has been for their wives to find professions with regular incomes.

A final important element is physical insecurity related to the dangers of working at sea. In Portugal, fisheries is not among the sectors with the highest accident rate, but is one with a high number of deaths per accident (Gabinete de Estudos e Planeamento, 2010). Lives lost at sea always also represent losses in income for families on land.

The possibility of government using fisheries to combat poverty and promote human and social development is currently limited by CFP obligations related to capacity reduction and resource conservation. There is no margin to significantly expand the sector, and hence employment creation in fisheries is not a viable option for improving the livelihoods of coastal inhabitants. SAER/ACL (2009) propose that small-scale fisheries concentrate on high-quality fresh products that fetch high prices in luxury tourism circles, but it is highly questionable if the scale at which this could take place would ever sustain a large number of fishermen.

Employment in distant-water industrial vessels is a possibility, and government mentions this in the PEN-P, but these are usually complex processes involving lengthy negotiations between the EU and third states. The termination of earlier agreements has had disastrous consequences for certain fishing communities in the country.[142]

The PO-P is meant to compensate fishermen for lost income and employment, and does so in a variety of ways. However, the plethora of compensatory measures will hardly be sufficient to sustain fisheries livelihoods for any prolonged period, let alone revitalise the sector. Not only are these compensations one-off payments, but they address nothing but income, leaving aside all other dimensions of professional realisation associated with fishing (see Smith & Clay, 2010).

An aspect that both the PEN-P and the PO-P do not mention explicitly is fishermen's involvement in marketing and commercialisation of fish products. It is known that producer prices are today at levels comparable to those three decades ago, and yet fresh fish has become something of a luxury product for consumers. The large differential in producer and consumer

[142] A case at hand is Sesimbra, the fishing community of which was severely affected by the sudden termination of the fisheries agreement with Morocco in 1999.

prices bypasses most fishermen and is captured solely by intermediaries, many of which with no links to fisheries. While some examples exist of fishing cooperatives controlling the whole value chain from producer to consumer,[143] it is generally recognised that most fishing professionals lack organisation and management skills to carry out any post-capture activity. To overcome these limitations, the PO-P makes funding available for supporting sector organisations and for skills development. It remains to be assessed how far these are used to increase fishermen's share of commercialisation circuits.

Still in regards to fisheries, great hopes are being deposited on the GACs and the projects that will be financed under axis four of the PO-P. The possibility of them addressing poverty issues exists, in as far as these relate to fishing and are deemed relevant by the groups devising the strategies and the proponents of individual projects. It is yet too early to know how far the GAC's will indeed lead to improvements in the lives of coastal communities. But the mere fact that different entities have been brought together to conceive of ways of fostering broad-based social development based on fisheries is a positive development in itself.

The maritime transport sector in Portugal may contribute to poverty reduction and human development in two generic ways. The first, indirect, way by increasing volume and efficiency of port activities. This results in expanded economic activity which in turn generates tax revenues for the state, which it can apply to poverty reduction or other development programmes. This applies not only to port operations, but also to shipping, but here the state is currently very limited by EU guidelines in the support it may provide to private operators. What greater efficiency may eventually also lead to is a reduction in transport costs, eventually trickling down to a lowering of final consumer prices, making some of these more easily accessible to the poor. However, given that maritime transport costs today make up a minute fraction of most consumer goods, this is not seen as a relevant impact. Most of government action related to maritime transport is in this domain, relating to large-scale investments meant to expand cargo traffic in and through Portugal.

The second way is through employment creation. Hypothetically expanded port and shipping activity generates more jobs, and some of these will be taken by the poor. Despite the fact that many of the poor in Portugal are unemployed, it is also true that many are also unskilled, and most jobs in the maritime sector require rather advanced technical skills. Exceptions might only be found in stevedoring jobs on shore and seafaring positions on board. Access to the

[143] Artesanalpesca, from Sesimbra, is one such example.

former is currently hindered by the corporate nature of stevedoring companies operating in Portuguese ports. As mentioned earlier, government has failed to revise the existing port labour regime, and hence admissions to the corps of stevedores is tightly controlled. There are advantages to the system, though, such as ensuring minimum levels of training and safety for workers, as well as satisfactory working conditions and pay. Government promotion of seafaring careers has involved subsidising the employment of new recruits and the social security discounts of crews on Portuguese vessels. Other than this, the EU severely restricts public subsidies to private operators. Through general support to university studies government has also tried to attract trainees to the nautical academy, but no significant breakthrough has been seen yet. It is probably also the case that most of the uneducated poor are not eligible for this level of studies. They are, however, for the training for deck positions, and one does indeed find individuals from poorer backgrounds in these positions. In this regard, however, the minute size of the Portuguese-controlled fleet is a limitation, as Portuguese deck crews have lesser opportunities of working on-board foreign vessels where competition from other nationals is much more intense.

In the ship-building and -repair industry the situation is similar. Business expansion generates tax revenues, but employment is increasingly skills-intensive, and hence largely inaccessible to the unskilled poor. As written earlier, government lacks a policy for this sub-sector, but it may be argued that investments in professional education as per the PNE assist those poor in acquiring some of the skills that sectors like ship-building and -repair require.

The case of the LSMP is a suitable illustration of the current situation regarding the balance between conservation and socio-economic development in Portugal. The policy itself has good intentions regarding sustainable development and promotion of traditional activities in conservation areas, but in practice the scale more easily tips in favour of conservation. That this is the case is hardly a surprise, given that conservation is that policy's main aim. And so it has been in the case of the LSMP, much to the discontent of local users.

What this case also highlights is that a change in the resource management regime – which, in the LSMP, most users agreed was necessary – will be opposed to by those who stand to lose from it if no compensation mechanisms are established. This is the case with the fishermen who have been evicted from certain fishing grounds, who claim to have suffered losses and for whom no compensation is in sight. The extent of those losses is difficult to quantify, as neither

baseline, nor follow-up studies exist on the socio-economy of fisheries in the area of the park. Calculating a just compensation is thus largely a speculative exercise.

Other than compensation, fishermen could diversify into other income-generating activities, notably tourism. Although possible in theory, professional immobility is particularly high in fisheries, compounded by a generally low educational level and, in the particular case of small-scale artisanal fisheries, poor investment capacity. In addition, the tourism offer in and around the LSMP is today very diverse, raising doubts over the feasibility of fishermen diversifying to this sector.

To finalise, a very brief reflection about the domains of intervention of the PNAI and the PNE that are most relevant for the poverty reduction potential of maritime sectors. These are interventions related to education and training, which expand employment opportunities for unskilled individuals, *inter alia* in these sectors. Also the expansion of social services, many of which enable individuals to pursue a professional career. Recall, in this respect, the benefits for working mothers of the availability of child-care centres. And, finally, the granting of social pensions, in particular to the elderly who, like most older fishermen, do not have a complete record of social security discounts.

6. São Tomé e Príncipe

São Tomé e Príncipe is an archipelagic state located in the Gulf of Guinea, roughly 200 nm to the west of Gabon (Figure 7). The country was a Portuguese plantation-colony from its discovery in 1471 until independence in 1975. With an estimated population of slightly over 160,000 – 7,000 in the island of Príncipe, and the remaining in the island of São Tomé – STP is among the world's poorest countries, with an estimated gross income per capita of 1,130 USD per annum.

Figure 7 - Map of São Tomé e Príncipe
(Source: http://www.earth.columbia.edu)

6.1 The Santomean Fisheries Sector

The fisheries sector in São Tomé e Príncipe is, like the one of Cape Verde, dominated by traditional, small-scale fishing activities. The country's coastline is approximately 210 km long, for a total emerged area of 1,001 km^2 and an EEZ of approximately160,000 km^2 (Rio, 2006). As is also the case in the Cape Verdean archipelago, the volcanic origin and the large average depths of the sea bottoms around the two Santomean islands imply that the respective insular shelf is narrow, the sea area above the shelf down to the 200 m isobath amounting only to 1,572 km^2 (Rio, 2006). Important fishing grounds are found in the sea area south of the island of Príncipe and extending to the Tinhosas islets, where a less abrupt shelf enables average levels of biological productivity that are substantially higher than those of deeper waters.

As may be expected from deep tropical waters, the average levels of marine biomass in the EEZs of STP is relatively low, exploitable fishery resources having been estimated at 12,000 t/year for coastal species, of which 30% are demersals (Rio, 2006). This author does not propose any estimate in respect of large pelagic species, mentioning only the volume of 8,500 t/year agreed between the Santomean government and the EC. A more recent publication by FAO (2009a) proposes an identical aggregate figure for coastal species – although with remarkable differences in the breakdown between coastal pelagic, demersal and shellfish species in relation to Rio's figures – but adds an estimated 17,000 t/year in large pelagics (tunas and tuna-like species). This figure has, apparently, been derived from the results of Russian surveys conducted in the mid 1980s (Adelino *et al.*, 2005). Current exploitation levels are believed to fall much shorter of the exploitable potential, estimations pointing at total yearly catches of approximately 4,000 t for artisanal fisheries (FAO, 2009a; Centro Tecnológico del Mar (CETMAR), 2009). Again there is some uncertainty in these figures, with Rio (2006) suggesting a lower figure of 3,000 to 3,500 t. The considerable level of uncertainty in all that concerns Santomean fisheries is largely the result of the lack of systematic and comprehensive procedures for collecting data on fishing effort or catches from artisanal fisheries, as well as on socio-economic aspects of the sector. In regards to catches of large migratory pelagic species, it is foreign fleets that account for the majority of them. Regrettably, there are no reliable data on those catches. Japanese fishing vessels operating under the agreement between the Santomean State and Japan Tuna consistently report their catches to Santomean authorities, but, to this author's knowledge, these data are not compiled in any manner. Catches by European vessels

operating under the fisheries partnership agreement with the EC are, for the most part, unreported, in clear contravention to the letter of the agreements (G. Costa, pers.comm.).[144]

As alluded to above, all fishing in STP is artisanal, industrial and semi-industrial fishing fleets being entirely absent.[145] The figures relative to the size of the fisheries sectors and sub-sectors, including fleet sizes, species composition and employment levels show important discrepancies between different sources. This fact is due not only to temporal variations in each of those dimensions – e.g. people entering or leaving the profession; boats that are built and dismantled – but also to the low frequency of data collection campaigns and, to a lesser extent, to differences in the classifications used (e.g. in regards to boat types). Moreover, it is important to bear in mind the informal nature of most of the artisanal fisheries sector in STP, something that renders systematic data collection and follow-up not only difficult, but also costly.

Estimates concerning the number of people engaged in artisanal fishing in STP, produced by the Directorate General for Fisheries (DGP-STP, *Direcção Geral das Pescas, São Tomé e Príncipe*) for year 2007 propose a total of 2,428 fishermen and 2,052 fish vendors (CETMAR, 2009).[146] Table 9 depicts the evolution of the number of fishermen, fishing vessels and respective degree of motorisation in STP fisheries since 1995.

[144] Graciano Costa, Direcção-Geral das Pescas (DGP-STP), personal communication on 28 January 2010, S. Tomé.

[145] Following independence, the Santomean government attempted to operate an industrial fishing fleet. An economic failure, the project was abandoned after a few years (Espirito Santo, 2009; Rio, 2006). More recently, the national media discussed the possibility of government reentering the industrial fishing business by rehabilitating some of the vessels of the ill-fated Astipesca fishing company. The fact that Astipesca's abandoned ships have capsized, grounded, or simply disappeared might explain why no visible steps have actually been taken.

[146] The FAO STP Country Profile sheet proposes figures that are double those of the DGP-STP (FAO, 2008). Although it is not unreasonable to presume that FAO's estimates are somewhat exaggerated, it should be borne in mind not only that the population of fishermen is very volatile, adjusting frequently to socio-economic conditions within and outside the fisheries sector, but also that many farmers in coastal areas are often also intermittently engaged in fishing. A similar situation is true of women fish vendors. While in most households it is only the mother who may be counted as a fish vendor, it is not uncommon that daughters occasionally also engage in selling fish. It is unknown to which extent aspects such as these affect the number of fishermen and vendors, but it is not difficult to imagine that they contribute to the differences in the figures presented by different sources.

	1995	2003	2007
Number of fishermen	2,060	1,989	2,428
Number of vessels	1,840	1,614	1,921
Degree of motorisation	36%	21%	23%

Table 9 - Number of fishermen, fishing vessels and degree of motorisation in STP in 1995, 2003 and 2007
(Sources: Oceanic Développement *et al.* [2004], Rio [2006] and CETMAR [2009])

The de-capitalisation of the artisanal sector identified in the 2004 evaluation of the EC fisheries agreement appears to have been reversed in recent years (Oceanic Développement *et al.*, 2004b), considering the figures relative to the size of the fleet and the respective rate of motorisation. Still, this apparent reversal of the earlier decline must be considered with care. Firstly, many of the improvements in the Santomean fleet have been funded by donor money, and hence do not mirror a *de facto* increase of investment capabilities, nor an actual accumulation of capital by local shipowners. In fact, Santomean fishermen are generally poor, and shipowners rarely have the necessary capital to invest in vessels and other fishing equipment. Moreover, because repair and maintenance are severely constrained by lack of skills and of replacement parts, gears and equipments usually have a reduced life span. Variations in the rate of motorisation are thus the reflection of fluctuations in the availability of donor-funded equipment, rather than trends in the investment capability of Santomean fishermen (Oceanic Développement *et al.*, 2004b; Oceanic Développement & Megapesca, 2009).

Secondly, there has been a stagnation of catches from artisanal fisheries at an estimated 4,000 t/year (CETMAR, 2009; FAO, 2009a), suggesting that productivity in the sector has not been affected by apparent improvements in equipment. In this respect, it has recently been suggested that "[f]ishermen take advantage of motorisation more as a safety measure and as a means of spending less time at sea, that as a factor enabling them to fish in more productive, but also more distant fishing grounds" (FAO, 2009a, p.21; own translation).

Rio (2006) has described six main units of artisanal fisheries in STP according to vessel and gear types. Table 10 describes these units, to which beach seining, an ancient and declining form of fishing has been added. Some of the fisheries carried out by larger motorised fibre-glass vessels (corresponding to the two bottom rows in Table 10) are at times referred to as the Santomean semi-industrial fleet (FAO, 2009a; Adelino *et al.*, 2005; Oceanic Développement *et*

al., 2004b). Others oppose this classification, recalling that STP does not have any processing industry that such vessels supply, and that the vessels are too small to qualify as semi-industrial. Designations such as "offshore artisanal" or "advanced artisanal" are then preferred (Rio, 2006; O. Aníbal, pers.comm.[147]).

Description	Targeted species	Dimension
Harpoon fishing; divers from beaches or from small canoes.	Demersal fishes and cephalopods; Marine turtles.	350 divers
Beach seines, trawling and seining to beach	Demersal fishes and cephalopods	Unknown
Hand lines and gillnets for both surface and bottom fishing; small wooden canoes (3-6 m) with sail and oars.	Demersal fish species, occasionally small pelagics	1012 canoes
Gillnets for surface and bottom fishing; medium-sized wooden boats (6-8 m) with motor (8-15 HP)	Demersal fish species, occasionally small pelagics	290 boats
Purse seine nets; large wooden boats (8-12 m) with motor (25-20 HP)	Small pelagic fish species	114 boats
Hand line for surface and bottom fishing; large open deck fiberglass boats (8-13m) with motor	Demersal fish species, occasionally small pelagics	3 boats
Hand line for surface and bottom fishing; large closed deck fiberglass boats (8-13m) with motor	Demersal fish species, occasionally small pelagics	2 boats

Table 10 - Main types of artisanal fisheries in São Tomé e Príncipe, including targeted species and estimated size
(Adapted from Rio [2006] and Oceanic Développement *et al.* [2004b])

Demersal fish stocks found in the coastal waters of STP, which constitute the mainstay of most artisanal fisheries, combine elements of eastern and western central Atlantic stocks (Oceanic Développment, 2004b).[148] Some of these have been considered to have commercial potential in European markets, namely seabreams (*Pagrus spp.*) and wreckfish (*Polyprion americanus*). Small pelagics are caught both by Santomean artisanal fishermen and by foreign industrial fleets, although in the case of the latter, the principal target are large migratory pelagic species. Common small pelagics include mackerel and round spat (*Decapterus macarellus* and *D. punctatus*), sardinella (*Sardinella aurita*) and different species of carangids and of flying fish (*Cheilopogon spp.*). The large pelagics found in Santomean waters include species of tuna, such as yellowfin (*Thunnus albacores*), bigeye (*T. obesus*) and skipjack (*Katsuwonus pelamis*); the Atlantic swordfish (*Xiphias gladius*); and various species of sharks (Oceanic Développement, 2004b). Although foreign fleets stand for most of the catches of large

[147] Olavo Aníbal, DGP-STP, personal communication on 20 Jan. 2010, São Tomé.
[148] For a comprehensive list of marine fish species in STP see Afonso *et al.* (1999), updated in Wirtz *et al.* (2007).

migratory pelagics, some of the smaller species are frequently caught by local artisanal vessels and are commonly found in Santomean markets.

Artisanal fishing is carried out in the coastal waters of the Santomean archipelago. The degree of motorisation and the availability of safety equipment on board determine the distance from shore where fishermen decide to operate. Because both are generally low, most fishing activity takes place within sight from the coast. Fishermen from the island of Príncipe and larger vessels from São Tomé often fish in the richer grounds to the south of Príncipe.

Capture activities are the exclusive responsibility of men. These also carry out the first sale, which typically takes place on the beach upon arrival from a fishing trip. From this stage onwards, women take the lead on all processing and commercialisation of fish products. As is also the case in CV, women perform their work in complete independence from men, and are solely responsible for managing the economic and financial aspects of commercialisation. Fish processing exists only in relatively incipient forms, limited mostly to sporadic salting and smoking. Recently, a small cooperative processing unit was established with the assistance of the non-governmental organisation (NGO) MARAPA, the International Fund for Agricultural Development (IFAD) and the Spanish cooperation agency, enabling women to produce and sell different products with higher added value.[149] Conservation facilities are scarce and frequently subject to maintenance problems, a situation that is particularly challenging in an equatorial country where fish processing is minimal and often inadequate. Trade in fisheries products is thus restricted to low-value, often low-quality products sold predominantly at local markets. It is not uncommon that tourism operators prefer imported fish over that which captured locally on account of the latter's poorer quality and utter absence of certification (O. Mesquita, pers.comm.).[150]

The institutional set-up of the fisheries sector is relatively underdeveloped. Government structures include the ministry responsible for fisheries, and the respective directorate general. Maritime surveillance and policing of the whole of the EEZ is the responsibility of the coast guard, while the ports captaincy of STP – itself part of the coast guard – is tasked with near-shore patrolling of all ocean activities, including granting and controlling fishing licenses.

[149] This processing unit is part of a larger marketing cooperative named Copafresco, which aims at improving the processing, transportation and commercialisation of fish products in STP. It currently handles over 15,000 kg of fresh fish per year (International Fund for Agricultural Development [IFAD], 2009).

[150] Osvaldo Mesquita, Community Association of Porto Alegre, personal communication on 25 January 2010, Porto Alegre.

fishermen' associations have been formally established in the past, but apart from a few exceptions, are mostly inoperative today. Partly as a consequence of this, the respective federation, GIEPPA, is little more than a formal presence in the Santomean fisheries panorama. NGOs with persistent and extended work in the sector are limited to one, MARAPA, although other organisations focusing on local development issues sometimes also support fishing activities. Finally, the ubiquitous presence of bi-lateral and multi-lateral cooperation agencies has manifested itself throughout the years since independence in the financing and implementation of numerous projects in the sector, of which many have failed.[151]

6.2 Towards a Santomean Fisheries Policy

The heading chosen for this section suggest that there might not exist a fisheries policy in STP. If this question is posed, different answers will be obtained depending on who is asked, and on what conditions are set for policy to exist. The formal government answer is that that policy does exist, as per fisheries-specific provisions in the so-called Policy Charter for Agriculture, Rural Development and Fisheries (CPADRP, Carta de Política Agrícola, Desenvolvimento Rural e Pescas). As will be discussed below, this document does indeed set a number of important strategic directions for Santomean fisheries, and proposes corresponding measures. On the other hand, on a more practical level, this policy has hardly seen any implementation so far, a reality that presumably justifies the views expressed by the highest-ranked fisheries civil servant that this policy actually does not exist (O. Aníbal, pers.comm.).[152] Indeed, as of January 2010, the efforts of the DGP-STP in respect of the national fisheries policy were concentrated on harmonising two distinct proposals concerning the operationalisation of the said charter, as a result of which a new policy will emerge. The de facto nonexistence of a fisheries policy justifies the perceptions held by people involved in fisheries at non-governmental level who were contacted for this study and who, unanimously claimed that there is little, if any government action in respect of fisheries, let alone a structured policy being implemented (J.L. Rodrigues & A. Luciano, J. Rio & J. Pessoa; O. Mesquita; and M. Mendizabal, pers.comm.;[153]

[151] In recent years, two of the most visible failures were the Spanish-funded fisheries complex at the port of Neves, which, after an initial investment of 1.5 million Euros in 2000 was abandoned in 2004; and the Taiwan-funded fish auction built outside the capital city in a place allegedly unsuited for berthing, which has never been used and is said to be awaiting conversion to a hospital.

[152] Olavo Aníbal, personal communication, n.147.

[153] Jośe Luís Rodrigues and Angelino Luciano, GIEPPA, personal communication on 25 January 2010, São Tomé; Jorge Rio & João Pessoa, MARAPA, personal communication, 18 January 2010, São Tomé; Osvaldo Mesquita, personal communication, n.150; Maité Mendizabal, AECID, personal communication on 26

see also CETMAR, 2009). Be it as it may, is spite of this absence of concerted government-led strategy for the fisheries sector, a significant number of actions have been carried out, mainly by non-governmental organisations and by cooperation agencies, often with collaboration – even if, often, only tacit – of government. With this in mind, the remainder of this section provides an overview of the main elements of the mentioned policy documents and of the actions sponsored by non-governmental entities.

The 2007 version of the CPADRP sets out two overarching goals concerning fisheries[154]: to increase and diversify fisheries production, in order to improve food security and increase income from fisheries; and to strengthen institutional capacity, in order, first, to achieve better planning in the sector performed by trained professionals capable of engaging in and applying results from research, and, second, to secure adequate funding from public and private sources for improving infrastructure and equipments in the sector. To achieve this, a set of more specific objectives has been proposed, comprising (FAO, 2009a, p.26): i) increasing catch volumes to enhance food security and income from fishing; ii) reforming the institutional framework in fisheries, involving improved allocation of technical and financial resources, investments in infrastructures, and promotion of professional fisheries organisations; iii) achieving adequate planning in the short-, medium- and long-terms of all matters and activities relating to fisheries; iv) training of professionals for the adoption and dissemination of new technologies; v) establishing structures for funding of fisheries development; and vi) improving conditions for conservation and distribution of fish products. Achievement of these objectives is to be aided by an ambitious 38 different measures addressing virtually all areas of policy, namely fisheries law; surveillance and enforcement; education and training of both civil servants and fishermen; research, including data collection and analysis; investments in infrastructures and equipments; and support to fishermen' organisations (Ministério da Economia & FAO, 2006). From this long list of measures, a smaller set has been put under the so-called Sub-programme for Fisheries Development, which comprises those projects that are either ongoing or under preparation or negotiation, as indicated in Table 11.

The double dates relative to the execution of projects 7 to 9 suggest an update in the provisional planning of these projects between 2006 and 2009 motivated, presumably, by anticipation of failure to keep to the 2010 implementation deadline. Indeed, as of January 2010, there was

January 2010, São Tomé.

[154] As the name implies, this document also contains provisions relative to the development of agriculture and livestock.

little, if any, visible or reported implementation of any of the projects in the sub-programme. No evidence of implementation was available from the DGP-STP.

Description of project	Period *	Cost ('000 USD)
1. Support to fishermen organisations	2008-2010	910
2. Research for monitoring, surveillance and management of coastal fishery resources	2008-2025	2,000
3. Development of rural aquaculture	2008-2025	2,000
4. Control and surveillance of the EEZ	2008-2025	4,000
5. Sanitary control of fishery products and improvement of food safety	2008-2015	2,000
6. Construction of fishing port in the island of Príncipe	2008-2025	4,000
7. Institutional support (infrastructures, training, equipments, etc)	2008-2010 / 2008-2015 *	3,600
8. Provision of credit to fishermen	2008-2010 / 2008-2015 *	1,000
9. Support to artisanal fisheries and to women involved in fish processing and commercialisation	2008-2010 / 2008-2015 *	1,600
	Total estimated cost	21,110

Table 11 - Identified projects in STP's Sub-programme for Fisheries Development, including predicted implementation period and budget
(Adapted from FAO [2009a] and Ministério da Economia & FAO [2006])
Notes: (*) In projects 7-9, first value after Ministério da Economia & FAO (2006) and second value after FAO (2009a)

The cornerstone of the fisheries policy is a marked increase in production. As noted earlier, this is not only one of the policy's overarching goals, but arguably also its most important one for reducing poverty and enhancing food security. Hence it is important to briefly discuss how this increase is expected to come about.[155] A fundamental assumption is that fisheries close to shore – that is, within 3-4 nm from the coast, targeted by the vast majority of small artisanal craft – are currently close to being fully exploited. Thus all potential increases in production has to be realised in fisheries taking place further offshore. This implies expansion of the existing fleet of semi-industrial vessels, as well as the development of an industrial fishing fleet. The semi-industrial fleet will produce fish for the internal market, with an estimated increase in catch volumes from the current 4,000 t/year to a maximum of 6,000 t/year in 2025. Industrial

[155] The discussion of this issue is based primarily on FAO (2009a). Surprisingly, this document contains two distinct sets of figures relative to predicted increases in production. Of the two sets, the one presented in annex 5 of that document was preferred, not only because it contains more detail that the set in pages 31-32, but especially because this latter set of figures contains a number of discrepancies.

fisheries will begin producing by 2015 at an estimated volume of 2,300 t/year, with a threefold increase up to 2025, exports absorbing 80% of this fleet's production.[156]

What are some of the socio-economic consequences of these projected increases? First, it is expected that per capita availability of fish products will be raised by 10% relative to present levels - close to 30 kg per person and year (see also Adelino *et al.*, 2005) – taking into consideration the projected demographic growth – from 160,000 today to 210,000 in 2025. In terms of employment, 1,000 new jobs will be added to the artisanal sub-sector by 2025 – the majority of which, presumably, in the semi-industrial fleet – while the development of the tuna industry – comprising an industrial fishing fleet and shore-based processing plants – will provide a further 750 jobs. This latter industry – comprising capture, processing and export – will contribute an estimated 15 million USD to the fisheries sector annual gross product, which will have reached close to 21.5 million USD per year by 2025, a tenfold increase relative to today's values (see Adelino *et al.*, 2005). For the individual artisanal fisherman, improvements in revenues from fishing might result from increases in sale prices, brought about, presumably, by improvements in processing, conservation and commercialisation of fish products. Indeed, since catch volumes per fisherman are not expected to increase – the limited rise in total catches is matched by the rise in the number of fishermen – it is primarily through higher value per catch that fishermen will succeed in improving their income. For this to happen, post-capture procedures have indeed to be put in place.

Having considered this, the policy objectives as stated in the CPADRP and elaborated in FAO (2009a) are contingent upon the realisation of significant increases in production, which, considering the stagnation of Santomean fisheries of the last decade, can be regarded as fairly ambitious. In particular, they rely on considerable investments – for the restructuring and expansion of fleets and gears, for shore-based facilities, and for small- to medium-scale processing facilities – and on much improved oversight of fishing activities. Whether or not funds will be mobilised is uncertain at this stage. So far funding for the fisheries sector has come from different sources but has been used almost exclusively in project-type interventions, not to give effect to a longer-term, consistent strategy for the sector. To overcome this limitation, two separate proposals have recently been made relative to ways of operationalising some of the measures contained in the CPADRP, ideally providing a framework through which

[156] In regards to aquaculture, despite mention being made of the aim of developing this sector to the extent of turning STP into a net exporter in the region, the absence of any current development or plans pertaining to this activity led the authors not to propose any measures relative to its future development.

funding can be directed at implementation of the policy. These are FAO's Integrated Programme for Restructuring of Fisheries (PIRP, *Programa Integrado de Reestruturação da Pesca*; FAO, 2009a) and the proposal for the Fisheries Master Plan (PDP, *Plano Director das Pescas*; Oceanic Développement & Megapesca, 2009) elaborated by a team of consultants under the fisheries support framework of the fisheries partnership agreement with the EC. Besides providing hints at possible future directions of the fisheries sector in the country, these two policy documents provide an overview of the limitations faced by Santomean fisheries today.

The PIRP adopts three main objectives to be achieved by 2015, namely to improve efficiency in fisheries through modernisation of artisanal and 'semi-industrial' fishing and promotion of aquaculture, in order to improve production, commercialisation and income; to establish industries and services for export of fish products; and to manage fishery resources in a sustainable manner.[157] The first objective comprises not only the upgrading of existing artisanal craft – to enable exploitation of fishing grounds further away from the coast – but also the establishment and, in some cases expansion of port services to provide better support to fishing vessels and to ensure better conservation and handling of fish products. Linked to this latter theme, mention is made of the aim of improving the transport of fish to different markets, in particular between the islands of São Tomé and Príncipe. In regards to aquaculture, the objective is to define its technical and economic bases, and to support the formation of an initial group of professionals for the future development of this activity.

Services and industries for fish export, it is proposed, will involve the creation of a deep-water port capable of handling discharges and transshipment of any type of fish product from the region. Whether or not this proposal involves remobilising investments made a decade ago in the port of Neves – sponsored by Spanish cooperation and abandoned since 2004, worth approximately 1,5 million Euros (M. Mendizabal, pers.comm.;[158] see also CETMAR, 2009) – is not discussed in the document. That step will be preceded by technical and legal measures aimed at facilitating trade and investments, in particular by foreign operators. It shall be complemented by the establishment of tuna processing plants. In parallel, the creation of a Santomean industrial fleet for shellfish will be promoted.

[157] A fourth objective is mentioned, namely to establish a unit for coordination and follow-up of the PIRP. Since this is a merely administrative component of the programme, it is not discussed here.
[158] Maité Mendizabal, personal communication, n.153.

The third objective comprises measures related to fisheries research, monitoring and supervision; the granting and control of access rights in fishing; co-management of resources in coastal waters; and to regional fisheries cooperation.

The PDP proposal advances a different, rather more elaborate set of actions towards the objectives of the CPADRP. It begins with proposing the strengthening of the legal framework pertaining to fisheries – involving the elaboration of a fisheries code inspired by FAO's Code of Conduct for Responsible Fisheries – and the structural reform of the sector – involving, at government level, a clearer separation of decision-making and oversight functions, and, at the level of civil society, the strengthening of associations of fisheries professionals, as well as the creation of mechanisms to improve communication between these two levels. Within the revised government structure for the sector, the plan stresses the need to improve knowledge about fisheries, oceanography and the marine environment; to implement measures for improving sustainability and conservation of marine resources and ecosystems, *inte alia* by means of area-based protection; and to improve enforcement through enhanced control of fishing activities and surveillance of marine areas under Santomean jurisdiction.

In terms of production, the PDP proposal focuses on modernising artisanal craft and the respective equipment, as well as on acquisition of safety equipment and on investments in port infrastructures. 'Soft' issues include training in navigation and security, management and equipment maintenance; support to associations of professionals; and studying the feasibility of micro-credit for promoting small-scale private investments. A second set of production-related measures is concerned with improving the supply of fish to the domestic market, dealing on one hand with processes and infrastructures for improved processing, conservation and distribution, and on the other with preparatory work towards the development of aquaculture activities.

Finally, measures are proposed for the promotion of fish exports to markets in the region and in the EU. This involves putting in place a series of legal and technical measures enabling compliance with sanitary and rule-of-origin requirements of these markets.

In all, the PDP proposal stands out as a much more realistic policy proposal than the PIRP. In particular, it is much better anchored in what is the reality of Santomean fisheries. Indeed, although some infrastructure development is proposed in the former document – quite a substantial one, in fact, if one considers the history of meagre investments in fisheries in STP –

this is of a scale much smaller than what is proposed in PIRP. A quick look at the estimated costs of the five-year programmes of measures included in each of the documents attests to this view: while the PDP proposal has a total budget of 4.8 million Euros – with the Santomean state covering slightly more than half of this value – the PIRP proposes an impressive total of 12.6 million Euros – with only 3% of state funding. This large differential should be seen in light not only of the difficulty of securing large funds from external donors and the private sector, but also of the reduced capacity of Santomean fisheries authorities to manage large programmes with vast funds (see Oceanic Développement *et al.*, 2004b; CETMAR, 2009).

This section closes with a summary of initiatives carried out by non-governmental entities in the domain of fisheries in STP. Perhaps the most visible of these entities is the organisation MARAPA (acronym for *Mar, Ambiente e Pesca Artesanal*), which, since its establishment in 1999, has been developing small-scale projects with fishing communities in areas such as improvement of fishing vessels and gears; processes and equipments for fish conservation, processing and distribution; establishment of micro-credit schemes for fishermen, and support of entrepreneurship, including among women; facilitation of tourism activities linked to marine and coastal conservation;[159] and implementation and dissemination of marine and coastal conservation practices. Funding for the different projects is typically obtained from external donors. Spanish cooperation has also been present in Santomean fisheries, with the highly visible project in the port of Neves one decade ago, and more recently with the provision of conservation and commercialisation facilities in the community of Praia Gamboa, as well as with support to the Copafresco cooperative for fish processing, both together with Marapa. Training and exchange of experience related to fisherman associations have also been supported by Spanish funds. The IFAD has been providing funds for the improvement of fishing craft and of equipment for fish distribution and commercialisation, as well as supporting Copafresco, again through Marapa. FAO has contributed primarily with support to policy-making and implementation of the fisheries law. Finally, the EC has funded interventions in fisheries primarily through the fisheries partnership agreement, of which the elaboration of the proposal for the PDP is one of the most recent ones.

[159] The so-called Jalé Ecolodge is probably the most famous of these. The fishermen' association of Porto Alegre manages a small tourism facility in a beach frequently used by marine turtles for laying eggs, while also running the turtle conservation initiative.

6.3 Maritime Transport and Ports in São Tomé e Príncipe

No comprehensive assessment of the Santomean shipping and port sectors has so far been published. As with many other domains of activity in this country, there is no systematic collection and analysis of data relating to these sectors. The government is said to have conducted a stocktaking of maritime activities in preparation for the forthcoming sector policy, but repeated delays in the official endorsement of this policy have so far precluded its publication (M. Narciso, pers.comm.).[160]. The ensuing discussion thus draws from information collected by the author, complemented by statistical data from ENAPORT – the Santomean port administration company – and secondary sources not pertaining directly to the maritime sector.

There are no accurate figures relative to the size and composition of the Santomean merchant fleet. Data from the port of Ana Chaves – where all maritime cargo except fuels is handled – show that in 2006, 2007 and 2008 not more than 25, nine and 14 Santomean-flagged vessels called at this port, respectively (ENAPORT, 2008; 2009). It is not known whether or not these figures include repeated calls. What is known is that this fleet is composed of small wooden or steel vessels engaged primarily in cabotage between the islands of São Tomé and Príncipe, with occasional voyages to neighbouring states in the West African coast (such as Gabon, Nigeria, Angola and Cameroon) (Columbia University, 2008; Gabinete do Ambiente, 2006a). Some of these vessels are converted fishing vessels, which, other than carrying general cargo, also engage in the transport of persons between the two islands (Gabinete do Ambiente, 2006b). The seaworthiness of this fleet is questionable and, although no exact records exist, accidents have occurred involving loss of lives and cargo (Government of the Autonomous Region of Príncipe [GARP] & UNDP, 2009).[161] In late 2009 a new passenger vessel, MV Príncipe, acquired by the Santomean state was put to service. After a troublesome start and for less than a year, this vessel ensured regular and speedier transport of people and minor cargo between the islands.[162] It has recently been put to sale by the Santomean state, allegedly because it

[160] Marcelino Narciso, Maritime and Port Institute, personal communication on 29 Jan. and 2 Sep. 2010, São Tomé.

[161] Between 2002 and 2008, five fatal accidents took place involving vessels carrying passengers between the two islands (GARP & UNDP, 2009). The latest of these occurred on 16 September 2008 and led to the loss of 18 lives. Some of the funerals of the victims had to be illuminated by motorcycle lights, since the fuel for the electricity generator in Príncipe was lost with the vessel (Veiga, 2008).

[162] After only one month in service, in December 2009 MV Príncipe suffered a series of failures, allegedly brought about by a combination of construction faults, repeated sailing in harsh weather conditions and an

did not match initial expectations. Once MV Príncipe is sold, government intends to acquire another vessel better suited to carry people and cargo between the two islands and between these and mainland Africa (Veiga, 2010a).

There is hardly any search and rescue capacity in the archipelago – especially in areas more distant from the coast – and most vessels have insufficient safety equipment. There is generalised insufficiency of capital for investments in the fleet, which has resulted in its low levels of efficiency and safety. Ship maintenance and repairs are performed at the three existing yards, all situated in the city of São Tomé (Gabinete do Ambiente, 2006a). In 2008 there existed nine ship and cargo agents – up from six in 2006 – of which three – Turimar, Hull & Blyth and Equador – accounted for over 93% of the cargo handled in Santomean ports (ENAPORT, 2008, 2009).

There are three seaports in the archipelago, two in the island of São Tomé – at Neves and in the capital city, the port of Ana Chaves – and one in the city of St. António in Príncipe. The port of Neves handles primarily liquid fuels in bulk and is currently operated by the National Fuel and Oil Company (ENCO, *Empresa Nacional de Combustíveis e Óleos*). The facilities for storage and distribution of fish once rehabilitated with Spanish funds are currently abandoned. Cargo volumes unloaded at Neves – there are no exports of liquids in bulk from STP – amounted to over 27.6 thousand tonnes in 2008, 24.7 in 2007 and 28.7 in 2006 (ENAPORT, 2008, 2009).

The port of St. António in Príncipe consists exclusively of a berth without any cargo handling or storage equipment.[163] The immediate consequence of this situation is that all cargo handling is presently done by hand, reducing efficiency, increasing costs and constituting a potential safety hazard to port workers. The maximum draft allowed at this berth is 2.5 m at high tide, something that limits the size of vessels serving the island. It is important to note, in this

accident outside the city of São Tomé. Repairs were delayed by disputes between the Santomean state and the Spanish yard that had built the vessel, and were only concluded in the early days of March 2010. Less than one week after repairs were completed, while at anchor outside São Tomé the vessel was set adrift during a storm and grounded at a local beach (a similar event had taken place years before with the coast guard patrol vessel MV Falcão – an offer by the USA – but the outcome was very different. Because then winds were offshore, the vessel was pushed away from the coast, only to be found years later in Nigeria, where it remains up to this day). Again, the vessel sustained damage that took over one month to be repaired. In the meanwhile, one of the vessels deployed to replace MV Príncipe was banned by Santomean maritime authorities from sailing due to inadequate safety provisions. What was more, all other vessels used in inter-island transport were non-operational, with the exception of one vessel, which, at the time was sailing in Nigeria (Andrade, 2010).

[163] The 9 ton crane installed in 1978 fell to the water in December 2009, while attempting to lift a tractor from a vessel (Veiga, 2010c). As of early February 2011, no replacement had yet been put in place.

regard, that these ships typically come from São Tomé, having to endure a voyage of 100 nm in the open ocean.

The most important port in the archipelago is that of Ana Chaves, in the capital city of São Tomé. The port has a berth approximately 200 m long and an area of 3 ha (GoSTP, 2006). Storage facilities are placed along the quay and date from colonial times. Because they were conceived for storage of cocoa and coffee bags for export, they are hardly suited for today's containerised cargo.[164] Cargo handling equipment – much of which was destroyed in a fire in 2009 – has recently been upgraded with the donation of heavy equipment by the Angolan state oil company (Sonangol), as per a memorandum signed with the Santomean state for the modernisation of the port.[165] Despite the introduction of new equipment, cargo handling at Ana Chaves is still hampered by a maximum draft of four metres at high tide, clearly insufficient for ocean going vessels engaged in international trade. These are typically forced to anchor outside the bay or at the anchor point at Fernão Dias, six nautical miles to the north. Cargo is then offloaded onto barges that ensure transport between the vessel and the shore. According to Assunção and co-authors (2006), these barges have a maximum capacity of 200 tons, and carry up to ten loaded or 12 empty containers. The same authors claim however, that despite these structural constraints, cargo handling efficiency has improved markedly in the course of the last decade, turn-around times in port having decreased by 75% (see also Columbia University, 2008). At present the average port productivity of 22.9 ton/h (ENAPORT, 2009) compares favourably with the average for Sub-Saharan African ports of 7-25 ton/h and with the international standard of 30 ton/h (Lozano, 2009). On a broader perspective, however, it has been said that it takes as many days to unload cargo in São Tomé as it takes hours to load at the European ports of origin (Assunção *et al.*, 2006).

Trade imbalances in STP are well illustrated by statistics concerning cargo movements at Santomean ports in 2008 (ENAPORT, 2009):[166] of the total of 111.7 thousand tons, only 4.1 thousand tons were export cargo. In terms of container traffic, of 3.274 unloaded containers, 3.233 were full and 41 empty, whereas of the 3.187 loaded containers, only 171 were full and the remaining 3.016 were empty.

[164] Containers accounted for 64% of all cargo handled at Ana Chaves in 2008 (ENAPORT, 2009).

[165] It is suspected that this memorandum carries with it the granting to Sonangol of the future concession contract for port operations at the port of Ana Chaves (Manuel Nascimento, ENAPORT, personal communication on 19 January 2010, São Tomé).

[166] These figures concern only import and export cargo going through the ports of Ana Chaves and Neves. The port of Príncipe only receives cargo that has first passed through the port of Ana Chaves.

Government structures dealing with maritime transport and ports are currently undergoing important reforms. These were formally initiated in the second half of 2007 by the gazetting of the Basic Act on Safety and Prevention of Marine Pollution, which, besides defining the state's responsibilities in regards to maritime services,[167] defines the structure of the so-called 'national system of maritime safety' (Act 13/2007). This new structure encompasses the coast guard, the maritime and port institute (IMAP-STP, *Instituto Marítimo-Portuário de São Tomé e Príncipe*) and the national IMO committee. The first is responsible for the surveillance of the country's vast EEZ. This force has historically been plagued by insufficiency of financial and material resources. In recent years, however, American military cooperation has contributed important improvements, most notably the installation of a radar system in the island of Príncipe[168] and the donation of a small patrol vessel (I. João, pers.comm.).[169] So far, however, the coast guard has not been able to ensure effective EEZ monitoring and control.

The IMO committee is composed of representatives from state and private entities with a stake in maritime transport. It was established under the ministry of foreign affairs to coordinate and advise on issues pertaining to the IMO.

Finally, the IMAP-STP is the new maritime administration in the country, tasked with registering, inspecting and certifying vessels; conducting port state controls; supervising the training of seafarers, as well as certifying them; investigating accidents; regulating navigation close to shore and in ports; ensuring navigability of waters under Santomean jurisdiction; and regulating cargo handling in port. Some of the attributions of this new institute have traditionally been performed by the port captaincy, the responsibilities of which are not outlined in the new act. Indeed, the captaincy is not even included in the national system of maritime safety, which is remarkable given its role in regulating maritime activities. Also

[167] These responsibilities comprise: to ensure the safety of navigation, of vessels, of maritime and port traffic and of all economic and recreational activities related to the sea, as well as to safeguard human life at sea, to guarantee well-being and labour conditions on-board and to ensure prevention of pollution of marine waters under national jurisdiction (Act 13/2007, art.1).

[168] The installation of this radar has not been free from controversy. In early 2010 the president of the Autonomous Region of Príncipe ordered the radar to be shut down, alleging that it prevented broadcasts from RDP and RTP Africa to be received in the island (these are international radio and television services of the Portuguese broadcasting corporation, the latter being the only broadcast freely available 24 hours per day in the whole country). A dispute with the defence ministry quickly ensued, with minister Elsa Pinto threatening to summarily imprison the president of Príncipe (Veiga, 2010b). The threat itself generated a wave of indignation for what it suggested of the minister's understanding of her role as a representative of the state and of the balance of powers within the state apparatus. The controversy, despite its intensity, was short lived and had no meaningful consequences: the minister kept her post and the radar went back into operation.

[169] Idalécio João, Coast Guard, personal communication on 19 January 2010, São Tomé.

remarkable is the fact that the captaincy still operates by a legal diploma from 1950, a lengthy document setting out a myriad of responsibilities for the single maritime authority in the country of that time (other than the naval force of the Portuguese colonial ruler, which dealt primarily with issues of sovereignty). Many of these responsibilities coincide with those assigned to IMAP-STP today (see Legislative Diploma no.372). Hence there is today some confusion over the new distribution of responsibilities between these two organisations, as well as some overlap of functions (for example in vessel inspections; R. Vera Cruz, pers.comm.).[170]

Port operations and administration are currently carried out by ENAPORT. A reform of port management is allegedly under preparation, involving the adoption of a landlord port model whereby ENAPORT will remain the regulator and administrator of port space, while most operations will be transferred to private entities via concession contracts. How this process is to take place is as yet unclear (M. Nascimento, pers.comm.).[171]

To this author's knowledge there are no professional organisations in the shipping and port sectors.

6.4 Strategic Directions for the Maritime Sector in STP

In the preceding section it was mentioned that there is presently no explicit maritime policy approved by the Santomean government. A policy proposal has been awaiting official endorsement at least since late 2009, but there are – as of September 2010 – no estimates as to when this might materialise. The only known strategic decision being pursued by government concerns the building of a large deep-water commercial port in Fernão Dias.[172] The larger idea behind this project is to transform STP into a platform for the provision of services for the entire region of the Gulf of Guinea, related not only to transport and trade, but also to offshore oil exploitation and fisheries. In line with this vision, the port of Fernão Dias will be a large container hub for the transshipment of cargo from large liners engaged in intercontinental voyages to smaller feeder vessels serving the region. The structure will comprise a 1,300 m long berth will a maximum allowed draft of 14 m, capable of serving vessels carrying up to

[170] Rui Vera Cruz, Port Captaincy of STP, personal communication on 26 January 2010, São Tomé.

[171] Manuel Nascimento, personal communication, n.165.

[172] The ensuing discussion draws from a personal communication from António Aguiar, adviser to the ministry of transport, on 27 January 2010, São Tomé; and from an unpublished memo by the GIPA - *Gabinete de Implementação dos Projectos do Porto de Aguas Profundas e de Modernização e Expansão do Aeroporto de S.Tomé*, dated February 2010.

9,000 TEUs and a maximum payload of approximately 100,000 tons. Within four to five years of commencement of operations, the terminal is projected to handle two million TEUs annually. It is also expected to employ close to 1,300 persons directly, and an added three to five thousand indirectly. For the building of the São Tomé hub a contract has been signed on 1 August 2008 with Terminal Link, a terminal operator owned by the French shipping company CMA-CGM. This contract also awards Terminal Link the exclusive operation of the port for an initial period of 75 years.

At present Terminal Link is in the process of securing partnerships for the financing of this large project – estimated to cost approximately 0.5 billion USD. The environmental impact assessment, as well as geological surveys are currently being finalised. As such, construction has been postponed until the early months of 2011 and is expected to take about two and a half years. Hence, if current predictions hold, the São Tomé hub will be ready to receive its first vessel in the second half of 2013.

6.5 Entering the Petroleum Era

As of September 2010 there is no commercial exploitation of hydrocarbons in STP, nor is there any certainty that this will ever take place. Notwithstanding this fact, the country has been regarded as having entered the petroleum era, even in the absence of oil (Weszkalnys, 2008).[173] STP's oil is to be found mainly in deep offshore reservoirs, which classifies the sector as 'marine', justifying its inclusion in this discussion. However, because production has not yet begun and, consequently, there are no actual activities related to the sector, the discussion here is relatively short, focusing primarily on the key developments that took place so far, and on the strategy that government has defined for the sector, in particular in what concerns the management of oil revenues.

References to hydrocarbons in STP have been traced back to 1876, the date of a letter sent by the colonial administration in the territory to the overseas ministry in Lisbon requesting that surface outcrops of oil at two sites in the island of São Tomé be investigated (Agência Nacional do Petróleo de São Tomé e Príncipe (ANP-STP), 2008). Nearly 100 years later, close to the end of colonial rule, new exploratory studies were conducted, first on land and later in offshore sites, but with little progress. Upon independence, the first two decades continued to witness very little, if any development, until in 1997 an agreement was signed between the Santomean state and the American-based Environmental Remediation Holding Corporation (ERHC), marking the beginning of STP's modern oil era (Weszkalnys, 2008; Tiny *et al.*, 2009).

This and a subsequent contract with Mobil (later ExxonMobil) in 1998, as well as the refusal of other major oil companies to sign agreements with the Santomean state because of unresolved issues surrounding the country's maritime boundaries (Frynas *et al.*, 2003) prompted the Santomean government to seek agreements concerning its maritime jurisdiction with neighbouring states. These were signed with Equatorial Guinea in 2001 and with Gabon in 2001 (Presidential Decree no.9/2001, no.10/2001), but no agreement was possible with Nigeria, who declared ownership of an oil-rich area also claimed by STP on the basis of the principle of equidistance (Seibert, 2004).[174] To avoid lengthy negotiations that would potentially discourage

[173] The titles of two papers analysing the history of oil sector developments in the archipelago illustrate the profound significance of the upcoming petroleum era, comparable to major socio-economic cycles of the past. Those are Seibert's (2004) "São Tomé e Príncipe: the difficult transition from aid-dependent cocoa producer to petrol state" and Frynas *et al.* (2003) "Business and politics in São Tomé e Príncipe: from cocoa monoculture to petro-state."

[174] Indeed, in July 1999 the Nigerian government had decided to sell deep-sea oil blocks in the area claimed

foreign investments, the two countries concluded a treaty for the joint development and exploitation of resources – in the subsoil and in the water column – in the disputed area (which came to be designated the 'Joint Development Zone' [JDZ], Figure 8), signed in Abuja on 21 February 2001 (ANP-STP, 2008; Groves, 2005; the agreement was ratified in STP through Presidential Decree no.8-A/2001).

Under this treaty – which stipulates a sharing of costs and benefits from oil exploitation of 60% to Nigeria and 40% to STP – a first licensing round was opened in April 2003, followed by a second round in November 2004. In spite of nine blocks having been put on offer in the former round, only one was awarded, namely to a consortium led by Chevron Texaco JDZ Limited Corp., the respective production sharing agreement having been signed in 2005, involving the payment of a signature bonus of 123 million USD. Blocks two, three and four in the JDZ were awarded after the second round in March 2005, with contracts signed one year later, and the respective bonuses adding up to a total of 201 million USD.[175] Of the sum of all bonuses, STP has so far received a total of 76 million USD (Tiny *et al.*, 2009). The JDZ block awarded to Chevron Texaco is the one expected to first begin commercial production, although at this stage it is highly uncertain if and when this will occur.[176]

In the EEZ, the Santomean government has in recent years contracted the generation of seismic data to assist in the characterisation and subsequent promotion of oil exploration in this area. In March 2010 a first licensing round was opened, which ran until 15 November 2010 (Figure 9).[177] Upon the signing of production sharing agreements, operators will have up to a maximum of eight years to begin commercial production (F. Vera Cruz, pers.comm.),[178] which suggests

by STP, prompting a formal complaint by the Santomean government (Seibert, 2004).

[175] This value is given in Tiny *et al.* (2009). A different value, of slightly over 145 million USD is given in a statement by the Joint Authority, accessible online at http://www.nigeriasaotomejda.com/PDFs/Signature%20Bonus%20Payment.pdf, accessed on 21 September 2010.

[176] According to Weszkalnys (2008) and Human Rights Watch (HRW) (2010), the first exploratory drilling in block one was deemed commercially non-viable. Similar drillings are currently being performed in the remaining blocks, with rumours that oil has been discovered in blocks two and three (HRW, 2010). In a document of 2008, the Santomean National Petroleum Agency (ANP, *Agência Nacional do Petróleo*) estimated that production would not commence in block one before 2010 (which, as of September 2010, is highly unlikely to happen) and in the remaining blocks before 2014 (ANP-STP, 2008).

[177] The initial deadline of 15 September 2010 was postponed in order "to enable further evaluation of the exploration acreage available" (http://www.stp-eez.com, accessed on 21 September 2010). The prorogation might equally have been motivated by a change in government that took place after the elections in August 2010.

[178] Fausto Vera Cruz, ANP, personal communication on 20 January 2010, São Tomé.

that if EEZ blocks are awarded in this first round, the first sale of EEZ oil might take place within the coming decade.[179]

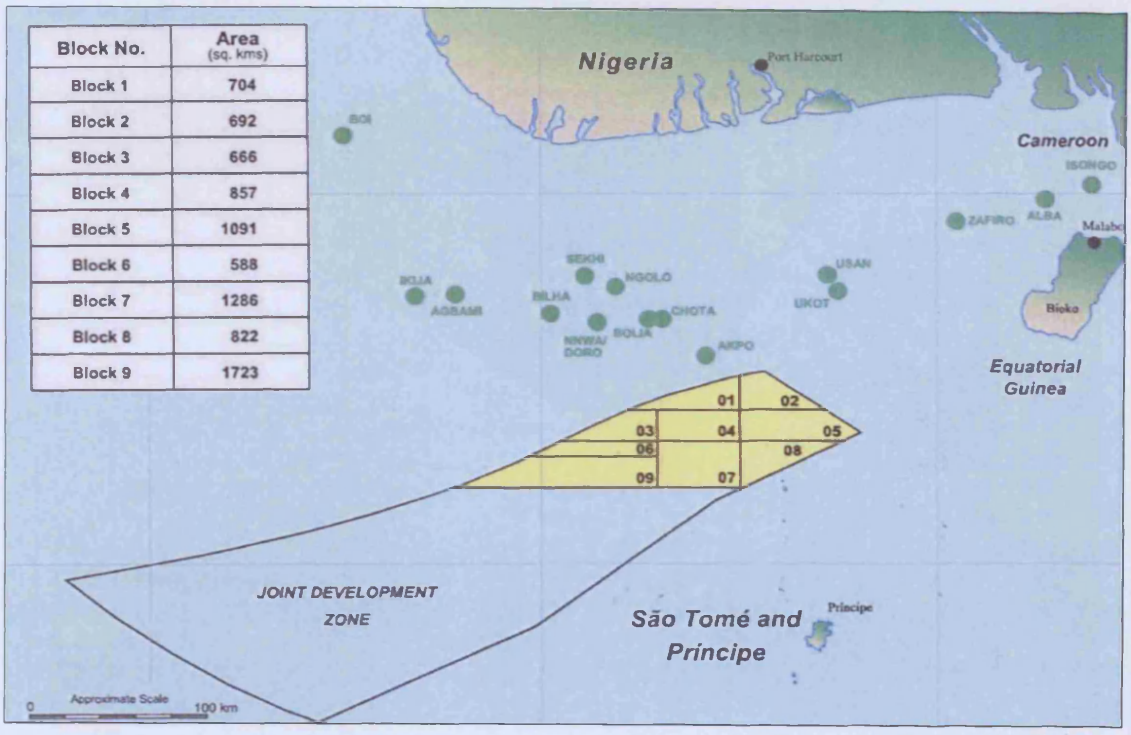

Figure 8 - Map of oil blocks in the STP-Nigeria JDZ
(Source: http://www.anp-stp.gov.st)

[179] It is uncertain at this stage how the contracts signed more than a decade ago with EHRC and Mobil – as well as the one with Petroleum Geoservices in 2001 - will be factored into future exploration agreements in the EEZ. Although these contracts have been deemed highly prejudicial to STP – namely by the country's president and its attorney general – the official position appears to be that those contracts will have to be respected, even if in renegotiated form (ANP-STP, 2008). For detailed accounts of the shadowy contracts with these three companies, see Frynas *et al.* (2003) and, in particular Seibert (2004).

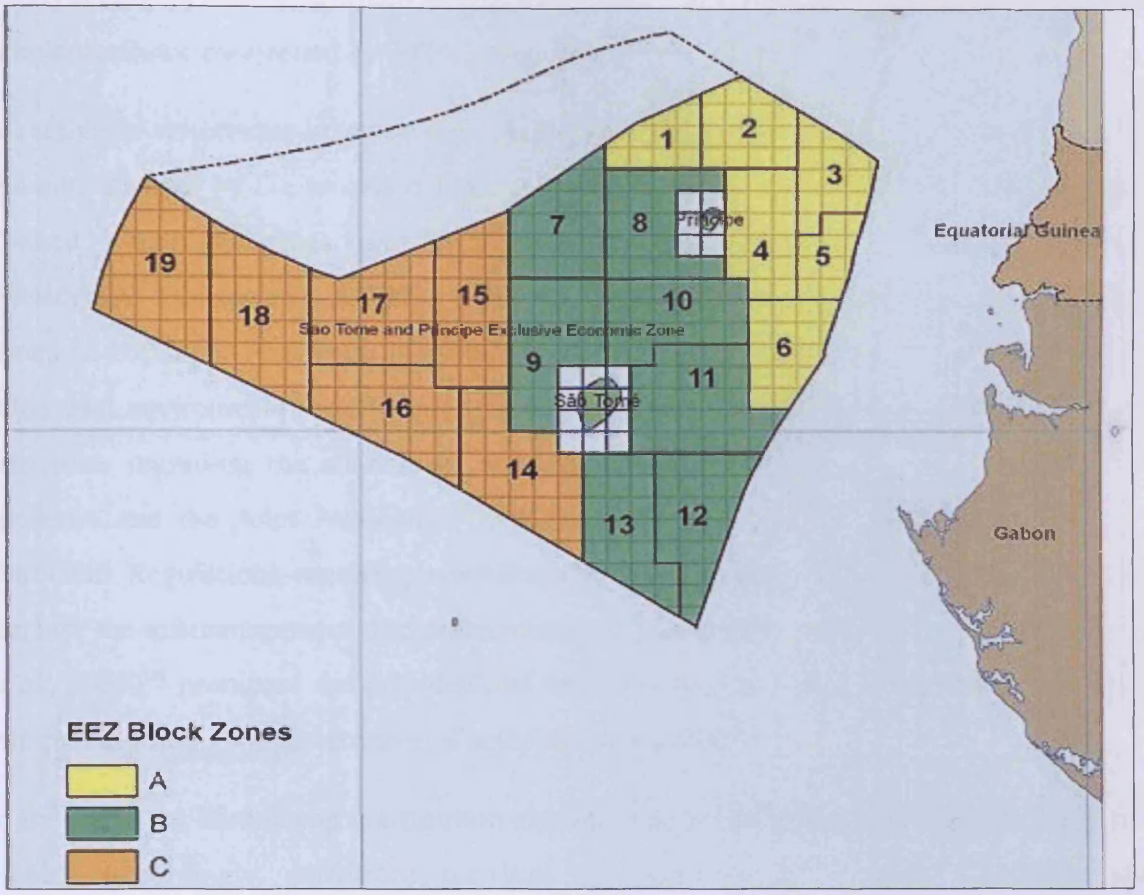

Figure 9 - Map of oil blocks in the Santomean EEZ
(Source: http://www.anp-stp.gov.st)

6.6 Legal Framework and Strategic Directions in STP's Petroleum Sector

"On paper, São Tomé e Príncipe appears to constitute an exemplary oil economy". This quote from a statement by Gisa Weszkalnys (2008, p.478) recognises the significant amount of effort invested by the Santomean state in devising a comprehensive regulatory regime for petroleum activities in advance of the country's *de facto* entry into the group of 'petro-states'. To a considerable extent, as acknowledged by several authors, this investment has been encouraged and supported by different foreign entities mindful of the risks faced by the relatively weak Santomean state of accompanying other resource-rich African countries down the 'resource curse' spiral (Seibert, 2004; Weszkalnys, 2008, 2009; Tiny *et al.*, 2009). In this regard, it has been to STP's advantage that commercial exploitation of hydrocarbons has been slow in coming, allowing ample time to set up that regime. In this section, its main elements will be

briefly reviewed, following which an overview is provided of the key strategic directions for the petroleum sector envisioned by STP's government.

All activities concerning resource exploitation in the JDZ are regulated by the respective treaty and administered by the so-called Joint Authority under the authority of the Joint Ministerial Council, where appointees from the Nigerian and Santomean states are equally represented (Presidential Decree no.8-A/2001). Activities in the JDZ are regulated by two instruments issued in 2003: the Petroleum Regulations, stipulating matters pertains to operations; health, safety and environment; and licensing and contracting; and the Tax Regulations, setting out provisions regarding the sharing of revenues from petroleum exploitation between private operators and the Joint Authority.[180] The existence of provisions in the treaty and in the Petroleum Regulations requiring confidentiality of petroleum operations, and the resulting fears for the mismanagement of petroleum resources and funds in the JDZ (Groves, 2005; Tiny *et al.*, 2009)[181] prompted the presidents of both countries to sign a joint declaration pledging transparency and good governance of activities in the JDZ.[182]

In the EEZ, the Santomean constitution ensures state ownership of all resources found in the seabed. Accordingly, petroleum activities are regulated by domestic legislation alone. Provisions relative to technical operations are laid down in the Framework Act on Petroleum Operations (Act 16/2009). The domestic equivalent to the JDZ Tax Regulations is the Petroleum Taxation Act, also gazetted in 2009, in time for enabling the taxation of any potential revenues accruing during 2010 (Act 15/2009). Oversight of transparency and acceptable administration practices in petroleum activities is partly the responsibility of the National Petroleum Council, established by Decree-law 3/04. This body also advises government in relation to the development of policies for the petroleum sector. The Extractive Industries Transparency Initiative (EITI), to which the Santomean state has committed itself – first indirectly through the Abuja Declaration, and explicitly, in June 2007, with an official declaration – is another means of STP demonstrating its performance in regards to transparency in the petroleum sector. However, despite considerable steps having been taken towards compliance (see Tiny *et al.*, 2009), in early 2010 the Santomean president filed a

[180] Both documents are accessible online at http://www.nigeriasaotomejda.com/Pages/Petroleum_Legislation.html.

[181] Frynas *et al.* (2003) and Seibert (2004) give accounts of some of the obscurities in earlier JDZ oil deals.

[182] The Abuja Joint Declaration Regarding Transparency and Governance in the Joint Development Zone, signed in Abuja on 26 June 2004. Available at http://www.nigeriasaotomejda.com/pdfs/abuja%20joint%20declaration.pdf, accessed on 21 September 2010.

request for voluntary suspension of EITI implementation in the country. This request having been rejected, the country lost its status as an EITI implementing country (see http://eiti.org/node/1469, accessed on 21 September 2010). The state's technical body for all petroleum-related matters is the National Petroleum Agency (ANP, *Agência Nacional do Petróleo*), formally established in 2004 to regulate, monitor and contract all activities pertaining to this industry in the country.

Finally, there is the Framework Act on Petroleum Revenues, arguably the key instrument for ensuring the transfer of benefits from oil exploitation to other sectors of the Santomean society (Act 8/2004). This act provides for the creation of the National Petroleum Account, to which all petroleum revenues are channelled, and for mechanisms for controlling the use of funds from this account. It not only specifies the mechanisms for regulating the amounts that government may withdraw for other expenses, but also indicates the priority areas where that money should be spent. The principle here is that money is used to implement government plans and strategies for eradicating poverty and improving the quality of life of the Santomean people, promoting good governance and fostering economic and social development (Act 8/2004, art.9). In the absence of those strategies and plans, petroleum money is to be employed in education, health, infrastructure development, rural development and strengthening of state structures. Upon commencement of commercial production, the yearly balance of the Petroleum Account, as well as any extraordinary petroleum revenues, are to be transferred to the so-called Permanent Fund of STP, which, with its very restrictive rules on money transfers, shall ensure that petroleum revenues are not exhausted once production ceases.

The contents of the petroleum revenues law very much illustrates government's policy regarding the role of this industry in the future development of the country.[183] This policy is framed by the concern not to induce quick and profound distortions in the Santomean economy, but instead to allow for the strengthening of basic elements of society that enable sustained

[183] The ensuing discussion is based largely on a document entitled "Strategy for the petroleum sector in the Democratic Republic of São Tomé e Príncipe" (ANP-STP, 2008), which was officially approved by cabinet at the council of ministers session of 16 April 2008. Given the official endorsement and the fact that the document is available from the website of the ANP (http://www.anp-stp.gov.st/pt/documentos, last accessed on 21 September 2010), it is assumed that this document does constitute the country's official policy for the sector. Surprisingly, however, when the executive director of the ANP was interviewed by the author, he stated that, to his knowledge, the government did not have any approved policy for the petroleum sector (Luís Prazeres, ANP, personal communication on 20 January 2010, São Tomé). Whether he meant that the mentioned strategy did not constitute government policy – that is 'strategy' and 'policy' are separate things and hence policy *per se* did not exist; or that policy did not exist because it was not being implemented – that is, the strategy document *is* the government's policy, but because it is not being implemented, it only exists on paper and not in practice – remains unclear to the author.

future growth – the most obvious of these elements being education, health, institutional robustness and public infrastructure (ANP-STP, 2008).[184] However, the country faces numerous and important development challenges, and government is conscious of the urgency of using oil money to improve the lives of Santomeans as quickly as possible. These apparently contradictory goals have led government to adopt a dual strategy of allowing for relatively fast development in the JDZ, while, at the same time, adopting a slower pace in exploitation of the EEZ. Experience and knowledge acquired in the former process are then meant to inform and help promote the latter. Onshore reserves – which, it might be recalled, constituted the first evidence of hydrocarbons in the archipelago – will be approached with extreme care, so as to not damage the natural environment or disrupt the lives of people in the vicinity of wells. Their size is believed to be significantly smaller than offshore reserves, and hence their exploitation will likely not have commercial purposes, but instead will serve to support and promote offshore activities.

Other than these aspects, the strategy for the petroleum sector also includes (ANP-STP, 2008): i) revising and updating the regulatory framework of the sector, in particular the one concerning production sharing agreements in the EEZ;[185] ii) clarifying the roles and responsibilities of the ANP, as well as improving coordination between the different entities involved in the sector; iii) studying options for direct participation by the state in commercial production, paying due regard to the need of separating commercial and supervisory roles within the state (F. Vera Cruz, pers.comm.);[186] iv) expanding and diversifying exploration contracts, first in the JDZ and later in the EEZ; v) improving the collection, analysis and sharing of petroleum-related data; and vi) strengthening state capacity, in particular of the ANP, to monitor petroleum operations, especially in the fields of health, safety and environmental protection.

[184] Some authors refer to this as an attempt to prevent STP from suffering the 'resource curse' and from 'Dutch disease', see Kyle (2002, 2003) and Weszkalnys (2008, 2009).

[185] This has partly already been achieved, with the publication of new laws for the petroleum sector in the end of 2009.

[186] Fausto Vera Cruz, personal communication, n.178.

6.7 Conservation of Santomean Coastal Resources

Nature conservation in STP focuses primarily on terrestrial ecosystems.[187] Indeed, the two large conservation areas that dominate the archipelago – and which take up approximately one third of the land area of each island – are largely concerned with protecting flora and fauna that is exclusively terrestrial. The coastal waters included in these areas are a minute fraction of the country's vast marine spaces, and their inclusion can hardly be said to have been motivated by concerns with the status of marine ecosystems. The notable exceptions to this predominantly terrestrial focus are initiatives for protecting marine turtles and, to a lesser extent, marine birds within those conservation areas, as well as regulatory measures for countering coastal erosion caused by uncontrolled sand mining along the coast.

In this section an overview is given of the main issues affecting the status of ocean and coastal ecosystems, and of the measures proposed by the Santomean state to address those. It should be noted that nature conservation initiatives in STP are presently in their infancy, and hence they do not yet constitute an important element affecting the lives of the Santomeans. Nonetheless, the fact that these initiatives are expected to play an important role in the future well-being of many Santomeans justifies that nature conservation in STP be included in this discussion.

There is today evidence of different types and levels of degradation in the ocean and coastal environments of STP. In general this degradation is of human origin and has been increasing in the course of the last few decades. Physical destruction of coastal habitats is one of the main problems affecting both islands. One of its causes is the indiscriminate felling of trees, a practice that increased significantly following the privatisation of rural lands after the end of the socialist regimes in the early 1990s (Albuquerque & Cesarini, 2009c, d; see also Espírito Santo, 2009). The wood is used for building houses and other small rural infrastructure, for furniture and, in smaller amounts, for industry (Albuquerque & Cesarini, 2009c, d; Vaz & Oliveira, 2007). In addition, it is used extensively for producing charcoal, which is the main source of heating in rural areas. In fisheries, Teixeira (2002) and Rio (2006) also refer to the

[187] Given the relatively small size of the Santomean islands, the whole country could easily be regarded as a 'coastal zone' (for example if one adopts the often-used breadth of 50km to demarcate the coastal zone). However, the ecosystems targeted by Santomean conservation initiatives, as well as the human activities related to these are for the most part exclusively terrestrial in that they have few, if any, linkages to marine ecosystems.

use of large trees for building dugout canoes,[188] an activity that has impacted primarily those forests closest to the seashore.

In coastal lands, another important cause of habitat destruction is man-made infrastructure. Large infrastructures are few in number, and for the most part confined to the larger settlements – the capital city of São Tomé, the facilities at Neves, and, in Príncipe, the city of St. António. Also, as seen earlier, port installations only exist at Ana Chaves, Neves and St. António, and these are all of relatively modest dimensions. However, all along low-lying stretches of the coast and at numerous embayments one finds unplanned and uncontrolled settlements that necessarily alter the natural environment. There is also a growing interest in placing tourism infrastructure close to the sea, which also implies destruction of coastal habitats at these sites (Rio, 2006; Vaz & Oliveira, 2007; Albuquerque & Cesarini, 2009c). Significant impacts on coastal ecosystems can reasonably be expected from the construction of the large container hub at Fernão Dias.

A particularly pervasive problem of coastal habitat degradation is beach erosion, motivated by uncontrolled sand mining (Teixeira, 2002; Santana, 2006; Vaz & Oliveira, 2007; Albuquerque & Cesarini, 2009c, d). Despite the gazetting of legislation prohibiting all unlicensed mining of sand and gravel (Decree 35/99), illegal extraction still continues, with grave consequences in terms of beach recession in several places. In this regard, Santana (2006) reports a reduction of over 100m over a period of 23 years at the Diogo Nunes beach in the north of São Tomé island, and a recession of the coast line in sandy beaches of 5.2 m per annum, on average.

A final aspect of marine habitat destruction is dynamite fishing, a practice used in many other parts of the world to capture large indiscriminate amounts of fish in a small area in shallow waters (Teixeira, 2002; Vaz & Oliveira, 2007). Together with the dragging of nets in shallow reefs and the use of pesticides in fishing – with the aim of numbing the fish, as with cyanide fishing – the use of explosives was one of the causes for the destruction of the few coral reefs once found in São Tomé (J. Rio & J. Pessoa, pers.comm.).[189]

Chemical alterations to coastal and marine ecosystems result from domestic sewage, from pesticides and fertilisers used in agriculture and, to a lesser extent from industrial residues. In regards to the first, it affects predominantly near-shore waters in the vicinity of human

[188] The importance of this activity is such that programmes for the introduction of fibre-glass fishing boats in STP have partly been motivated by the need to halt the cutting of the few trees remaining that are large enough for conoe-building (Jorge Rio and João Pessoa, personal communication, n.153).

[189] Jorge Rio and João Pessoa, pesonal communication, n.153.

settlements, given the complete absence of wastewater treatment facilities in the country. Chemicals used in agriculture have been identified as the principal sources of pollution in rivers and streams (Albuquerque & Cesarini, 2009c), through which they enter the marine environment. Toxic agrochemicals are slowly being phased out, partly as a result of efforts by government to restrict their entry into the country. However, lack of knowledge of the effects of the use of these products still leads some Santomean farmers to continue using these products. Except for the larger human settlements, there is no collection, let alone treatment of solid wastes in STP.

Impacts on biodiversity have resulted from a combination of habitat degradation and direct predation and extraction by humans. As mentioned earlier, the flora has suffered primarily from the opening up of forest areas for agriculture and human settlements, as well as for timber production. There are also important concerns relative to the status of numerous ocean and coastal animal species. In regards to fishery resources – most of which are fish – there is a generalised lack of detailed knowledge about the status of most commercial species.[190] At the same time it is often assumed that near-shore resources are overexploited. Certain fishing practices appear to have particularly undesirable effects: Teixeira (2002) and Vaz & Oliveira (2007) allude to the particular case of species of grunts (*Pomadasys sp.*) caught as 2-4 cm long fry with very small mesh-size nets. Rio and Pessoa (pers.comm.)[191] also mentioned a practice whereby fishermen gather around objects floating on the sea surface onto which certain fish species attach their eggs, and then capture both the spawning fish and, often also, the floating objects, thereby disrupting species' reproduction.

A much more visible and publicised threat affects marine turtles. While these animals are often used to promote eco-tourism on the islands, they are subject to frequent hunting by divers for their meat and eggs, as well as for their shells, used in handicrafts (Teixeira, 2002; Albuquerque & Cesarini, 2009c, d). Turtle meat is consumed locally and sold at local markets for approximately the same price of demersal fishes, whereas shells command much higher prices, including in foreign markets (N. Loureiro, pers.comm.).[192] Despite repeated initiatives

[190] This paucity of knowledge is particularly acute in relation to biological resources of inland water bodies (Albuquerque & Cesarini, 2009c, d).

[191] Jorge Rio and João Pessoa, personal communication, n.153.

[192] Nuno Loureiro, University of Algarve and SADA Project, personal communication on 22 January 2010, St. António, Príncipe. Contrary to Teixeira (2002), Loureiro maintained that turtle meat is not especially appreciated by Santomeans, and that turtles are caught and their meat consumed just as any other product of the sea. This probably justifies the relatively low value attributed to turtle meat, on par with that of demersal fish. However, the high prices commanded by turtle shells – exported illegally, *inter alia* to Angola – probably justifies part of the intense hunting pressure these animals have been subject to in the archipelago.

since the mid 1990s to protect all five species found in the country,[193] marine turtles continue to be caught today at alarming levels. Estimates for the island of Príncipe alone point at between 800 and 1,000 killings every year, as reported by Albuquerque & Cesarini (2009d). These authors also mention that at current catch levels, the populations of hawksbill, olive ridley and leatherback turtles in Príncipe will collapse within one generation, and that of green sea turtle in two. Other than marine turtles, fishermen often also engage in capturing sea birds in the Tinhosas islets south of Príncipe, again for own consumption and for sale at markets in São Tomé (Albuquerque & Cesarini, 2009d). Although no figures exist relative to the magnitude of this activity, it impact is considered to be large.

6.8 The Ôbo Conservation Area

Nature conservation in STP is dominated by the Ôbo Natural Park. This conservation area, composed of one park in each island was formally established by acts 6 and 7 of 2006. These are based on the Santomean act on the conservation of fauna, flora and protected areas (Act 11/99), and follow from over a decade of work by the ECOFAC programme towards the protection of STP's forest ecosystems (for an historical overview see Albuquerque & Cesarini (2009c, d).[194] The park's core zones, covering a total of 28,000 ha - that is, close to 30% of the country's territory - of the southern and south-eastern portion of the islands, are free of permanent human settlements. This results largely from the remoteness and the mountainous relief of these areas, as well as from the unsuitability of their soils for agriculture (Albuquerque & Cesarini, 2009c, d), factors that enabled spots of primary forest to escape conversion to sugar, coffee or cocoa plantations in the past. Nonetheless, the park does affect people who, coming from outside, depend on its resources, in particular those living in its fringes and within its buffer zones. Here it will be reviewed what are the park's provisions regarding conservation of ocean and coastal ecosystems.

The central element for nature conservation in the Ôbo Natural Park are the zoning plans for each of the two areas. These plans establish general provisions regarding access to and uses of

[193] These species and the respective status according to the IUCN Marine Turtle Specialist Group (http://iucn-mtsg.org) are: *Chelonia mydas* (green turtle; endangered); *Eretmochelys imbricata* (hawksbill turtle; critically endangered); *Dermochelys coriacea* (leatherback turtle; critically endangered); *Lepidochelys olivacea* (olive ridley turtle; vulnerable); and *Caretta caretta* (loggerhead turtle; endangered).

[194] Ôbo means 'forest' or 'jungle' in local Santomean language. ECOFAC (*Programme de Conservation et Utilisation Rationale des Ecosystèmes Forestiers d'Afrique Centrale*) is geared towards the conservation and sustainable use of forest resources in six countries in Central Africa – Cameroon, Central African Republic, Congo Brazzaville, Equatorial Guinea, Gabon and STP).

ecosystems, with the aim of awarding protection to valuable habitats and species. In both islands, the plans establish three distinct generic zones, summarised in Table 12 (see Figures 10 and 11). In the case of the Príncipe park, Albuquerque & Cesarini (2009d) propose that the buffer zone be extended to include the whole of the island, and that the islets Boné do Jóquei and the two Tinhosas be classified as protected areas – in the case of the former as a T1 zone of the Ôbo Natural Park, and in the case of the latter as a separate integral reserve.

Category		Characteristics	Permitted activities
Total protection zone	Type T1	Flora and fauna of exceptional value, in particular endemisms	Scientific research and education; Ecosystems monitoring
	Type T2	Flora and fauna of very high or exceptional value, of medium sensitivity; Primary forest or evolving secondary forest; Areas requiring further investigation	Biological and ecological studies; Controlled visiting; Temporary infrastructure to support visiting
Partial protection zone	Type P1	Ecosystems that have been or are used by humans in ways that harm biodiversity, but which ought to be rehabilitated in view of conservation objectives for the park's most important areas	Controlled exploitation of medicinal species; Environmental education and guided tours; Temporary infrastructure to support visiting
	Type P2	Ecosystems that are sustainably used by humans, but which are of relevance for objectives of nature conservation	Small infrastructure to support permitted activities in the park, incl. rehabilitation of historic buildings; Extensive agriculture and forestry approved by the park; Local traditional activities
Buffer zone		Areas inhabited and used by humans outside the limits of the park, constituting a transition from the generic resource use regime to that applicable within the park	Potentially all, but subject to stricter evaluation of possible impacts on the park's ecosystems and on its conservation objectives

Table 12 - Characteristics and summary of permitted activities in the different protection zones of the Ôbo Natural Park
(Adapted from Albuquerque & Cesarini [2009c])

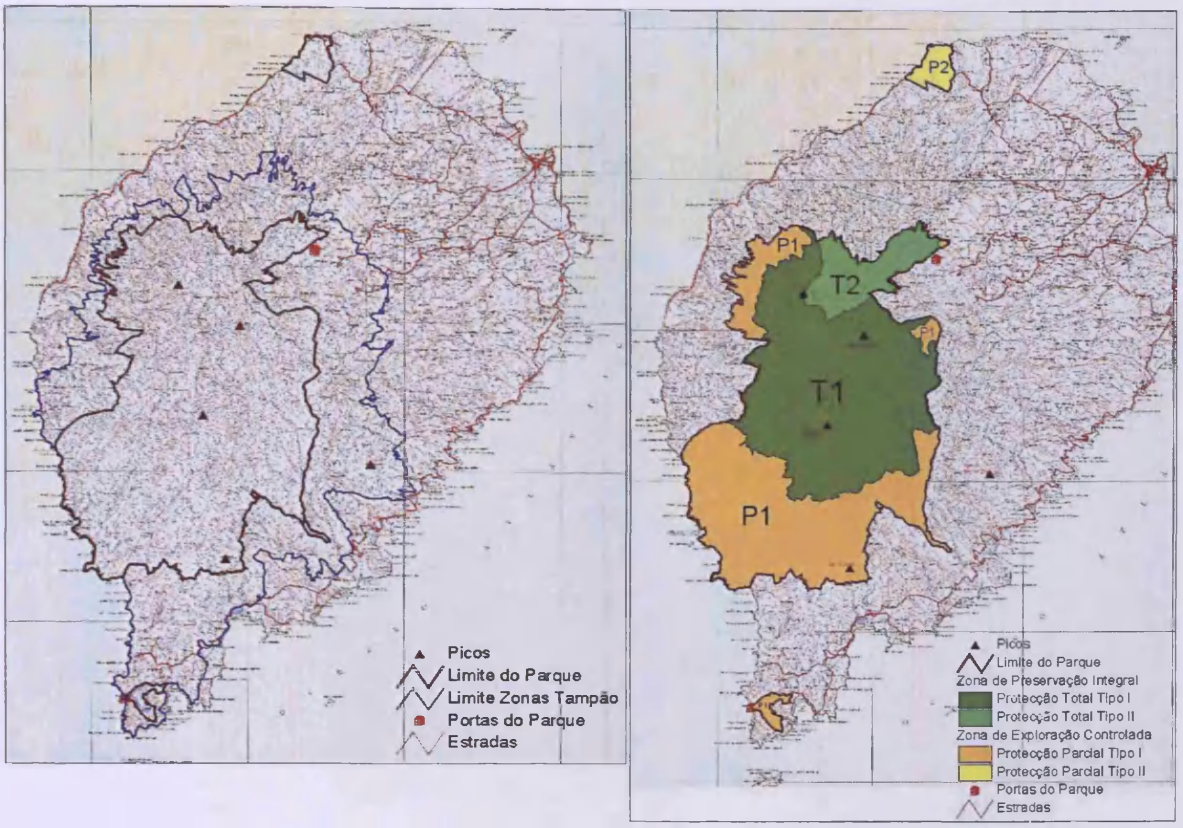

Figure 10 - Limits of the Ôbo Natural Park in S.Tomé (left) and zoning scheme (right)
(Source: Albuquerque & Cesarini [2009c])
Notes: *Picos*: Mounts; *Limite do Parque*: Park limits; *Limite Zonas Tampão*: Limits of buffer zones; *Portas do Parque*: Park entrances; *Estradas*: Roads.
Zona de Preservação Integral / Protecção Total: Total protection zone; *Zona de exploração controlada / Protecção Parcial*: Partial protection zone.

Conservation is ensured primarily by restricting human presence in designated areas, in particular by prohibiting most extractive activities from taking place. In relation to ocean and coastal ecosystems, this will be felt more strongly in the island of Príncipe, since the coastal and marine areas included in the park is larger and subject to more stringent protection than those in the São Tomé park.[195] From the perspective of marine conservation, the zoning plan of the Príncipe park offers better prospects of protecting valuable habitats and species, in particular marine turtles, as it encompasses a larger number of sites where illegal turtle hunting currently takes place (see Albuquerque & Cesarini, 2009c, p.94; d, p.84).[196]

[195] Recall that the Ôbo park in São Tomé does not include any coastal waters. In Príncipe a 500 m wide belt of coastal waters around the south-western tip of the island is included in the park.
[196] In this regard, it is important to note that t regional decree has been passed prohibiting the capture and sale of turtles and respective products in the island of Príncipe (Regional Legislative Decree no.3/ALRAP). The park's regulations add a further layer of protection within its boundaries.

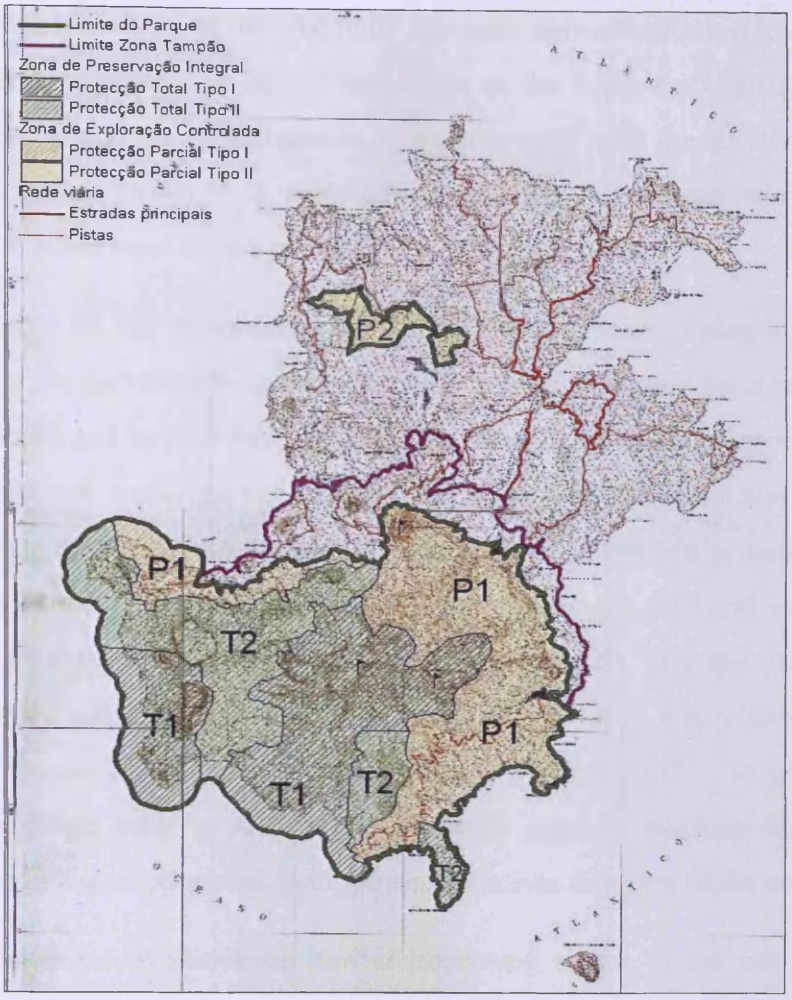

Figure 11 - Limits and zoning scheme of the Ôbo Natural Park in Príncipe
(Source: Albuquerque & Cesarini [2009d])
Notes: *Limite do Parque*: Park limits; *Limite Zonas Tampão*: Limits of buffer zones; *Zona de Preservação Integral / Protecção Total*: Total protection zone; *Zona de exploração controlada / Protecção Parcial*: Partial protection zone; *Rede viária*: Road network; *Estradas principais*: Main roads; *Pistas*: Tracks.

Other than spatially-determined restrictions emanating from zoning plans, the Ôbo Natural Park has adopted other initiatives pertaining to coastal and marine ecosystems with three generic aims (Albuquerque & Cesarini, 2009a, b). Firstly, they address the protection and rehabilitation of natural elements. Here one finds all measures pertaining to habitat and species conservation, as well as measures for improving environmental and sanitary conditions of human settlements in the buffer zones. Specific to ocean and coastal ecosystems, proposed measures include, in the São Tomé park, the removal of toxic substances deposited near Lagoa Azul[197]; the elaboration of a plan for community-based management of the Malanza mangrove

[197] This measure is also motivated by public health concerns, as the dumping site is freely accessible to people and animals. This has been the dumping site for anti-malaria chemicals in the past.

forest; the dissemination of environmentally adequate agriculture practices in the buffer zone; and an awareness campaign to halt deforestation in the Praia das Conchas area. In Príncipe these measures include the establishment of a partnership with the SADA programme for the protection of marine turtles.[198] A campaign broadcasted in national television discouraging consumption of turtle meat is also proposed.

Secondly, a series of initiatives are proposed for the two areas aiming at developing human communities in the parks' buffer zones. Common to both parks and pertaining more directly to pollution of ocean and coastal environments are the elaboration of plans for water supply and especially sanitation, including the construction of latrines for individual households and of sanitation infrastructure for pig farms. The management plans then propose different projects to assist individuals and communities in developing products for local markets and for park visitors and tourists, establishing links between producers and the park and potentially providing them a share of envisioned tourism revenues. It is also planned – and currently underway in the island of Príncipe (J. Cassandra, pers.comm.)[199] - to apply both parks for UNESCO Biosphere Reserve and World Heritage status, something that offers enhanced prospects of receiving support for development initiatives that benefit the country as a whole.

Thirdly, a smaller set of initiatives aim at improving access to the two parks, a necessary condition for the expansion of eco-tourism activities. In both islands this includes improvements to park trails and respective signalling, as well as rehabilitation of tourism infrastructure. It is also proposed to initiate ways of involving local inhabitants – in particular those residing in the buffer zones – in tourism activities linked to the park. These measures affect the two areas as a whole, that is to say terrestrial, and ocean and coastal environments alike.

Other than these three sets of initiatives, others are proposed relative to education and awareness raising, research and communication and institutional strengthening that potentially affect all of the park's ecosystems (see Albuquerque & Cesarini, 2009a, b).

[198] The SADA programme is a partnership between the University of Algarve and the Príncipe Regional Government for the protection and rehabilitation of marine turtles in STP, in particular hawksbill turtle (*E. imbricata,* locally known as 'sada') in Príncipe. Information about the project is available online at http://tartarugasstomeprincipe.wordpress.com.

[199] José Cassandra, Príncipe Regional Government, personal communication on 22 and 23 January, and 2 September 2010, St. António, Príncipe.

6.9 Poverty and Human Development in STP

> "And, because the land and the sea are truly generous, external signs of generalised poverty – as suggested by some official reports and documents that maintain that 60% of the population lives below the poverty line – are not visible."
>
> (GARP & UNDP, 2009, p.25)

STP is one of Africa's smallest countries and, correspondingly, one if the continent's smallest economies. Its average per capita income, estimated at 1,130 USD in 2009, is on par with the average for Sub-Saharan Africa of 1,125 USD.[200] Since gaining independence the country has been heavily dependent on foreign development assistance, to the extent that in 2005 its external debt amounted to five times the country's GNP (Government of STP & European Community (GoSTP & EC), 2007).[201] A number of interlinked factors have been proposed to explain the poor socio-economic development of the country (Frynas *et al.*, 2003; GoSTP, 2005a; GoSTP & EC, 2007; Columbia University, 2008; Espírito Santo, 2009). Firstly, independence marked the departure of the whole of the colonial administration and the loss of all expertise and means of production that sustained the colonial plantation economy. Indeed, because agriculture production had been run exclusively by the Portuguese, upon independence STP found itself ill-prepared either to ensure continuity of earlier production processes, or to ensure sufficient levels of food production.[202] The Marxist experiment of the first decade after independence highlighted government's lack of preparedness to maintain the plantation system, let alone improve it. Domestic food production declined abruptly and many plantation workers left the lands. The ensuing land privatisation of the early 1990s was inadequately prepared and

[200] The World Bank, Country Data, Sao Tome and Principe. Available at http://data.worldbank.org/country/sao-tome-and-principe. [Accessed on 30 September 2010].

[201] Two years later the Heavily Indebted Poor Countries initiative of the International Monetary Fund enabled a large part of the Santomean external debt to be pardoned. The latest data by the World Bank, relative to 2008, indicate an outstanding debt equal to 99.6% of GDP (The World Bank, see n.53).

[202] The authors of the development plan for the island of Príncipe argue that STP's rural population was hardly ever rural in the sense of deriving a livelihood from agriculture or livestock (GARP & UNDP, 2009). Instead, rural inhabitants were employees of agro-industrial establishments, where they were treated in a slave-like manner (see Temudo, 2008; Temudo & Arvéola [2004] argue that the Santomean colonial society was grounded on social exclusion and stratification), with little or no opportunities of doing any farming of their own. This population was rural without being 'agricultural'. A comparable situation existed in fisheries, where, apart from the famous 'Angolares' fishermen secluded in the south of the island of São Tomé (see Feio, 2008 and Seibert, 1998), all fishing was controlled by the Portuguese and aimed primarily at supplying the plantations with fresh fish.

badly done, with most farmers receiving plots too small and of insufficient quality to enable subsistence farming (see Temudo, 2008). By then, most rural infrastructure was in poor condition, after close to two decades of inadequate maintenance. Throughout this process of agricultural decay, cocoa maintained its position as the country's dominant export – about 89% of total exports by weight and 99% by value, in 2006 (approximately 2.4 thousand tonnes and 4.3 million USD, respectively) – while the country increased its reliance on imported food to ensure domestic food security – imports of food and beverages amounted to over 14.9 million USD in 2006, twice the figure of 2001 and over three times that of cocoa exports in 2006 (Instituto Nacional de Estatística, São Tomé e Príncipe [INE-STP], 2007).

Significant improvements in agriculture are hampered by severely degraded production and transport infrastructure, as well as by weak technical and managerial capacity of farmers and public officials alike.[203] These aspects point to a further limitation, namely the weakness, at times even absence, of government action, evidenced by the adoption of inadequate policies, poor monitoring and enforcement powers, low efficiency of state services and widespread corruption.[204] Notwithstanding widespread dissatisfaction with state action, profound resource constraints in many areas and recurrent political instability resulting from frequent cabinet shifts – 14 since the first democratic elections in 1991 - STP is a remarkably peaceful country with seemingly stable democratic institutions.

A final constrain on STP's socio-economic development is said to be the combination of insularity – double insularity in the case of Príncipe (GARP & UNDP, 2009) – and the minute domestic market.[205] Further to this, the historical dependence on very few foreign partners – chief among which is Portugal and in the region, Gabon and, more recently, Angola – has been deemed prejudicial for the country (Assunção *et al.*, 2006), a situation that only now the new government explicitly wants to reverse.

The quote that opens this section suggests that (monetary) poverty might not be as big a problem in STP as some authors maintain. Indeed, STP is classified by UNDP as a 'medium human development' country, on par with South Africa and Morocco. A reasonable – for Sub-

[203] Total agricultural production doubled from 2005 to 2006, reaching a value slightly above 64 thousand tons. The root vegetable taro (locally known as 'matabala') accounted for most of this sharp increase. Between 2001 and 2005 production had remained stagnant.

[204] Espírito Santo (2009) offers a detailed account of many of government's disastrous policy and business endeavours of the past three decades. Seibert (2006) continues to be the most complete reference source on corruption in political circles in STP in the period up to 1999.

[205] For a careful analysis of these issues see Espírito Santo (2009).

Saharan African standards – life expectancy at birth of 66 years (UNDP, 2009) and outstanding achievements in education – namely an impressive increase in total school enrolment from 57.7% in 2001 to 88.2% in 2007, with adult literacy reaching 85% this same year (UNDP, 2009) - are largely to thank for this classification. Still, in 2001 close to 54% of the Santomean population lived on less than the poverty threshold yearly amount of 294 USD, up from 36% in 1987 and 48% in 1992 (GoSTP, 2005a).[206]

Earlier studies on poverty showed that Santomeans living in monetary poverty exhibit higher illiteracy, have less regular access to medical care and have poorer housing conditions. In particular, they are almost completely deprived of water supply and sanitation. Monetary poverty is concentrated in rural areas – where the average consumption level is one third of that in urban areas – and affects different parts of the country differently – poverty is highest in the north-west (Lobata and Lembá districts), followed by the south-east of São Tomé (Caué and Cantagalo) and the Region of Príncipe. The districts of Mé-Zochi and Água Grande – where the capital city is located – are the wealthiest (GoSTP, 2005a). This distribution is hardly surprising, given the dominant position of the services sector in the Santomean economy – estimated at 60% of GNP in 2007 (UNDP, 2009) – which is concentrated in urban areas. But, even here, inadequate and profoundly degraded infrastructures constitute important constraints to development, hampering not only the expansion of income-generating activities, but also limiting access to public services, in particular for the most disadvantaged.

6.10 The Santomean Poverty Reduction Strategy

The 2005 Santomean poverty reduction strategy and the respective 'Priority Actions Programme' – tabled at a development partners meeting held in December 2005 for securing funds for a number of specific interventions (GoSTP, 2005b)[207] – set out the framework of state action towards the aims of reducing poverty and advancing socio-economic development.

[206] Because of lack of resources – and, arguably, of insufficient political will – a more recent survey of household incomes has not yet been conducted, which would enable poverty figures to be updated (Filipina Rocha, Observatório de Redução da Pobreza, personal communication on 27 January 2010, São Tomé; see also Observatório de Redução da Pobreza (2008, 2009). A country-wide household survey is planned for 2011, with data available probably in 2012.

[207] This document covers the period 2006-2008 and should have been updated since. This, however, has not happened, presumably because the initial set of actions has not been fully implemented (Observatório de Redução da Pobreza, 2008, 2009). Possibly in anticipation of these delays, government classified the Priority Actions Programme – also termed 'Priority Investments Programme', after the programme that ran between 2003 and 2005 – as 'sliding' *(deslizante*; GoSTP, 2005b, p.42), suggesting that its lifetime extends indefinitely into the future.

Because of the pervasiveness of poverty in Santomean society, these documents ought to inform policy-making in every policy domain so that all sectors contribute to those aims. Given the diversity of measures contained in these two documents, only a summary overview is presented here. More attention is devoted to measures pertaining specifically to ocean sectors.

The poverty reduction strategy pursues three main aims, namely i) to reduce the proportion of poor people by half by 2010, and by two thirds by 2015; ii) to achieve universal access to basic social services and to improve living conditions for the whole population by 2015; and iii) to considerably reduce regional disparities in terms of social conditions and gender equality. On top of this, government is also committed to achieving the MDGs (GoSTP, 2005a).

Despite recognising the importance of promoting income- and employment-generating activities for improving the lives of the poor, government recognises that sustainable socio-economic development in STP is constrained primarily by inadequate governance. In particular, it is acknowledged that the size and composition of state organs is neither balanced nor adequate for the needs of the country; that the judicial system is insufficiently resourced; that there is deficient management of public goods, with lack of transparency and accountability in public spending; that decentralised services do not function properly; that public administration is largely inefficient and lacks clear operational guidelines; and that there is weak participation of civil society in deliberative processes. Hence government elected good public governance as the single most important priority of the whole strategy, with the objectives of enhancing political stability, increasing effectiveness of state action, fostering openness and transparency and curbing corruption in public affairs, and stimulating public involvement in policy design and implementation.

Two of the strategy's four other priority areas contain those measures pertaining more directly to ocean sectors. These are priorities two – 'accelerated and distributive growth' – and three – 'growth and diversification opportunities for the poor'. Under the former, one finds the cross-sectoral objective of revising regulatory and administrative frameworks to facilitate private sector development, which naturally applies to ocean activities. Specific to fisheries, and in view of increasing this sector's contribution to GNP and its employment- and income-generating potential, the strategy proposes to enhance production and consumption of fish products through measures for improving capture and commercialisation; for improving living and working conditions of fishing communities; for restructuring institutions in view of better adapting them to the sector's reality, as well as of preparing the implementation of the fisheries

master plan; and for strengthening state institutions to implement a fisheries strategy and to improve control of fishing activities.

In respect of maritime transport, the strategy only vaguely refers to the intentions of reinforcing transport networks between the country's two islands; of developing international maritime transport – *inter alia* by supporting initiatives of private operators; and of improving operations at the port of Ana Chaves.

Offshore hydrocarbon exploitation activities are discussed with very little detail, given that the strategy document was written at a time when considerable uncertainty still reigned regarding production potential in Santomean waters.[208] As for coastal and marine environmental protection, simple mention is made of the need to prevent coastal erosion caused by sand mining.

Priority area 'opportunities for the poor' addresses a number of measures intended to facilitate engagement of the poor in income-generating activities. Again, a number of cross-sectoral measures potentially affect ocean sectors – in particular fisheries – such as state support to small-scale investments, including micro-credit; technical and managerial training; and improvement of storage, transport and commercialisation facilities. Proposals specific to ocean sectors include the development of short distance maritime services – presumably inter-island cabotage; establishment of an animal fodder factory using fish as raw product; and development of a fish salting process for the future export of salted fish.

The remaining two priority areas – 'human resources development and improvement of basic social services' – dealing with issues of education, health, water supply and sanitation, and demography – and 'execution, follow-up and evaluation mechanisms' do not refer specifically to ocean activities.

The Priority Actions Programme is fundamentally an effort to narrow the scope of the strategy to a sub-set of priority projects and to assign a cost to these. Financial and socio-economic conditions are analysed in some detail in terms of how they might affect programme implementation. Because it is subordinate to the strategy, the programme very much follows the contents of the latter. In regards to ocean sectors, however, a few notable differences exist, namely the inclusion of the Fernão Dias container hub under priority area two, 'accelerated and

[208] The strategy text does not even refer to the first licensing round held in 2003, which indicates that it was written the latest in late 2002 and was not updated until publication in 2005 (see, for example, p.37, item 156).

distributive growth', for which the preliminary feasibility studies already had been produced at the time;[209] the exclusion of fisheries-related initiative altogether from this same priority area – recall that in the strategy this was the priority area containing the most ambitious aims concerning enhancement of fisheries production; a proposal for the study of a berth in Príncipe, alongside improvements to the port of Ana Chaves, which the strategy already referred to; and the development of a maritime and port master plan.

In priority area three, 'opportunities for the poor' only one marine-related action is retained, namely the rehabilitation of fishing infrastructure in the port of Neves, in view of improving handling, conservation and distribution of fishery products. To this author's knowledge, of these actions, as well as of others related to capacity building, institutional strengthening and strategy development in fisheries – only the promotion of the Fernão Dias hub, some minor operational improvements in the port of Ana Chaves and preparatory work towards a maritime and port strategy show some signs of implementation.

[209] According to Assunção *et al.* (2006) these studies were presented in November 2004, that is, after the poverty reduction strategy had been drafted, which probably took place in late 2002 without any subsequent updating (see above).

6.11 Poverty Reduction Contents of Santomean Ocean Policies

This last section is concerned with how the interventions proposed for the ocean sectors contribute to efforts of poverty reduction and human development in STP. Of the four sectors considered, only fisheries is expected to contribute to those efforts directly through developments in the sector itself. All others will affect poverty and development indirectly, namely in offshore oil through transfers to social sectors; in shipping through facilitation of other economic sectors and trade; and in marine conservation through promotion of tourism. These three sectors are discussed first, followed by fisheries. The section closes with a brief summary of how those contributions align with the contents of the Santomean poverty reduction strategy.

Revenues from offshore petroleum exploitation are expected to be the single most important factor in the future development of STP. Bonuses, royalties and taxes are the only foreseen sources of oil income for the country, while it is not expected to benefit from up- or downstream activities, at least not in a foreseeable future.[210] Once the industry is established, the country should also derive benefits from enhanced movement of visitors. In terms of domestic capacity, it is probable that expertise will be developed in the country relative to the management of offshore hydrocarbon exploitation. Some evidence of visitor movements and enhanced domestic capacity is already visible as a result of the preparatory work of the last decade. Moreover, it is reasonable to anticipate the creation of employment for STP nationals on board exploration platforms. Nonetheless, it is by far monetary revenues that will bring about the most profound changes for the majority of the population, especially the poor, who lack the possibility of directly engaging in the industry. The dimension of this impact is impossible to quantify at this stage, given all the uncertainties regarding the size and commercial viability of Santomean petroleum reserves. In a country as small as STP and with a minute economy – GNP in 2009 amounted to not more that 190.5 million USD (World Bank, STP country data, see n.200) - this impact is expected to be significant.[211]

[210] No post processing or handling of crude oil or refined products is planned to take place in the country, primarily because of concerns with the environmental sensitivity of the islands (F. Vera Cruz, personal communication, n.178). Given the country's level of development, it is highly unlikely that STP will be involved in the production of technology or equipment for offshore hydrocarbon exploration.

[211] Kyle (2002) discusses some figures that illustrate the relative importance of even modest (in absolute terms) oil revenues for the Santomean economy (with hindsight it is possible to say that these figures have not materialised). ExxonMobil's surveys pointed at oil reserves in the JDZ in the vicinity of 500 million barrels. Production estimates by the IMF indicated that the JDZ would be producing 10,000 barrels/day in

The flagship of the Santomean government's shipping and port strategy – and, so far, the only element of this strategy that is known to the public – is the project for the container hub in Fernão Dias. The impact of this infrastructure on the country's socio-economic development is expected to be a reduction of transport costs and times, with a consequent reduction of prices of imported goods. This would come about primarily through diversification of transport services, thereby eliminating current dependence on Portugal as source of imports and re-export platform. In this regard, Assunção and co-authors (2006) mention estimates that goods imported from Portugal cost STP on average 15% more than equivalent goods sourced in the region. In addition, cargo volumes to STP are so small and port infrastructure so limiting that cargo is often concentrated in Portugal before being re-exported to STP. Regular international lines calling at Fernão Dias would very much eliminate the Portuguese intermediary. Expansion of businesses and services associated with the new port would potentially create employment opportunities – including for the poor, and adding to jobs during construction – estimated at approximately 5,000 new jobs (see above).

Negative consequences for coastal communities and in particular for fishermen consist of alterations to stretches of the coast, involving destruction of resources and impaired access to certain marine areas that would have to be reserved for navigation of large merchant vessels. Poorer fishermen unable to sail to more distant grounds would be among those most affected.

On a more modest scale, smaller investments in port equipment could render port operations more efficient and less costly, potentially reducing the costs of imports and exports. In the particular case of the port of Príncipe, it is felt that the absence of cargo handling equipment is blocking important developments in the island, namely the rehabilitation of the airport and the construction of tourism resorts (J. Cassandra, pers.comm.).[212] The negative consequences clearly extend beyond the maritime sector.

The recent introduction of MV Príncipe to carry people and small cargo between the country's two islands is a measure potentially benefiting poorer segments of the Santomean population unable to afford air fares. The levels of comfort and safety are incomparably higher than those of earlier improvised services. Regrettably, as described earlier, the state has decided to sell

2005, increasing to 120,000 barrels/day in 2009. Kyle estimates, in accordance with these figures, that a prince of 10 USD/barrel – a very bleak figure, compared to today's price above 80 USD/barrels – would represent a 30% increase to the country's GNP from oil revenues alone.

[212] José Cassandra, personal communication, n.199.

MV Príncipe, and it is uncertain at this stage whether the vessel will in fact be replaced or if the service will be abandoned.

Still in regards to safety at sea, it should be recognised that the attention that STP – in particular the petroleum promise – has sparked with the American administration has facilitated the installation of a radar enabling surveillance of parts of the Santomean EEZ. The potential for improvements to safety and security at sea, while still to become visible, is not to be overlooked.

The promotion of seafaring careers – for example by supporting training abroad, given the absence of nautical education in STP – could open up new employment opportunities for Santomeans. It is, however, unknown to this author whether or not measures in this domain have been included in the as yet unpublished maritime policy proposal.

Marine and coastal conservation by itself does not offer any prospects of contributing to poverty reduction and human development. On the contrary, restricting access to and use of natural resources makes life harder for those who depend on them, especially if alternatives are few. In the case of the two Santomean conservation areas, these are not inhabited, and the restrictions envisioned for the buffer zone will not restrict resource-dependent livelihoods very significantly. On the other hand, government intends to promote certain income-generating activities in association with the country's conservation areas – such as growing of high-value crops and production of handicrafts – so that local people can integrate and benefit from eco-tourism activities.

The experience of integrating ocean and coastal tourism with socio-economic development of local communities is mixed in STP. The Bombom islet luxury resort in Príncipe, for example, despite the very limited integration of its activities with local people and services, is to engage in the rehabilitation of the island's airport, potentially benefiting all its inhabitants.[213] The Pestana Equador luxury resort in the Rolas islet in the southern tip of São Tomé island has a history of, on one side, unresolved conflicts with local communities, motivated by attempted evictions from the island and hindrances to resource use, and on the other, attempts to upgrade basic infrastructure in nearby settlements.[214] In both cases resort administrations often show

[213] There is obviously a fair degree of self-interest in the contract signed between the Bombom resort and the regional government. But this does not deny potential benefits for the population in general.

[214] For a fuller description, see Freitas *et al.* (2009), and especially Brito (2004), who also discusses positive examples of rural tourism initiatives closely linked to resident communities. This latter issue is also dealt with in Brito (2006).

reluctance to buy fish from local fishermen on grounds of the poor handling and conservation conditions that are perceived to render fish unsuited for consumption by tourists (O. Mesquita; D. Matos, pers.comm.).[215] On a different scale, the Jalé Ecolodge is entirely run by the Porto Alegre community, who also manages a turtle conservation programme in two nearby beaches in the south of São Tomé. Income from tourism, albeit very modest in comparison to the two other resorts, accrues directly to the local community.

In fisheries, the respective policy proposals – FAO's PIRP and the PDP proposal – have the potential to contribute to poverty reduction and human development in different ways, as identified in the ex-ante analyses of the two documents. This contribution comes first and foremost from increased catches made possible by the use of larger and safer vessels exploiting fishing grounds further offshore than those currently exploited. Improvements to fish handling and conservation will contribute to fishery products attaining higher sale prices, with higher incomes accruing to fishermen and women fish vendors alike.[216] Both plans envision the training of fishermen and vendors in fish conservation and processing techniques, again contributing to products with higher quality capable of fetching higher prices, as well as to higher individual qualification of these professionals. In combination, these improvements are also expected to help reduce the level of waste (unsold fish), which today amounts to 10% of catches, on average (Oceanic Développement & Megapesca, 2009).

The PIRP is particularly ambitious in regards to improvements in port infrastructure, in particular berthing, landing and storage facilities. If implemented, these could improve safety and efficiency of fish landing operations. Moreover, the establishment of centralised fish landing sites, and in particular of the proposed fish processing facilities, would potentially generate a small cluster of services for the fishing sector in the country, taking advantage of some degree of economy of scale and concentration of expertise. Vessel maintenance and repair, gear storage and maintenance and ice and water supplies could hereby become more easily accessible and affordable to a larger number of fishermen, potentially improving working conditions and efficiency. Today landing sites are too dispersed to justify investments in such facilities. The large proposed fish export centre would add to this increment of scale, and in addition generate foreign revenues to individual investors and to the state, via taxes.

[215] Osvaldo Mesquita, personal communication, see n.150; Damião Matos, Regional Fisheries Directorate, Príncipe, personal communication on 22 January 2010, St. António, Príncipe.

[216] Recall that one of the reasons why high-end hotels refuse to buy fish from local fishermen is inadequate conservation and handling of fish. Today hotels rely primarily on imported fish products.

The proposed increase in catch levels upon which both proposals are based also presupposes that average fish consumption remains at current or slightly higher levels. This ensures availability of important sources of protein, and reduces dependence on imported food sources, an aspect of particular relevance for poor people, who have less money to buy these products.[217]

Considering how these contributions of the ocean sectors align with the contents of the Santomean poverty reduction strategy, one finds that the proposals in the latter are generally well represented in ocean policies. This is especially true of the two fisheries policy proposals, both of which explicitly build upon the policy objectives of the poverty reduction strategy to devise a set of sector-specific measures geared towards those objectives.[218]

The development of the Fernão Dias hub features prominently among the few shipping- and port-related measures in the Priority Actions Programme, as it does among the current economic priorities of the Santomean government. It is unknown, however, how other proposals in the poverty reduction strategy related to maritime transport will feature in the upcoming maritime policy. Nonetheless, it is a fact that, even in the absence of such policy, the maritime link to Príncipe has been significantly improved – with the proviso that a solution is found to the current uncertainty surrounding the replacement of MV Príncipe; surveillance at sea has been made possible with the installation of a new radar; and new cargo handling equipment has been put into operation at the port of Ana Chaves.

Developments in and around the Ôbo park appear to align with requirements for involvement of local populations in tourism operations, as advocated by the poverty reduction strategy. On the other hand, as was exemplified above by the Bombom and Pestana Equador resorts, how and to which extent this involvement actually takes place is – and will probably remain – dependant on the willingness and ability of individual tourism investors. Given government's eagerness to attract and retain foreign investment, it is not probable that it will impose on these investors too strict requirements relative to benefits for local populations.

Finally, in regards to offshore petroleum, it is still too early to assess how well the architecture for managing large petroleum revenues that has been put in place in recent years will hold once

[217] Indeed, in many instances fish is still purchased by direct exchange with other goods, in particular agriculture products. This type of transactions does not usually involve imported goods which have to be purchased with money.

[218] These proposals – in particular the PDP proposal – contain a number of other measures, related to resource management and institutional efficiency that have little to do with poverty reduction objectives, at least not directly. Nonetheless, these measures do align with the priority objective of the poverty reduction strategy of improving public governance and promoting sustainable use of natural resources.

these revenues start flowing in. If the country is to use oil money to attain higher overall levels of human development – as the poverty reduction strategy argues that it should – then it is critically important that it does.

7. Comparative Perspective

This chapter links some of the findings from the three case-studies by considering the following issues. First, the approaches used in each country to conceptualise and characterise poverty are reviewed, linking the conceptual discussion of chapter two with the situation in the three countries. How this conceptualisation varies between analyses in the ocean sectors and in the development policy sector is highlighted. Second, the approaches to poverty reduction in general, and the actual and potential contribution of ocean sectors to this effort in particular are discussed. Finally, drawing on the findings from chapter three, this chapter considers how poverty impacts of ocean policies are monitored and assessed in the three countries.

7.1 Approaches to the Conceptualisation of Poverty

In the three countries, the word poverty refers *sensu stricto* to monetary poverty, and the poor are those who experience some degree of monetary deprivation. In Portugal and STP this is measured in terms of income, in CV of expenditure. STP uses an absolute poverty threshold based on the cost of a basic commodities basket, corresponding today to 294 USD per year and person. In Portugal and CV relative thresholds are used, calculated as 60% of the median national income and expenditure, respectively, the figures in use today being 4,969 Euros and 49,485 CV Escudos (approximately 451 Euros) per annum. The latest estimates of poverty incidence are 26.6% in CV, 18% in Portugal and 53.8% in STP.

Despite the adoption of a monetary-subsistence approach to the measurement of poverty, all three countries situate monetary poverty in the context of broader multi-dimensional deprivation. Aspects such as employment, labour conditions, housing, educational attainment, access to services and health are used to characterise the living conditions of the poor. An important distinction seems to exist, though. While in CV and STP individuals are classified as poor based on monetary-subsistence criteria alone, in Portugal, because monetary poverty is but one element of the broader concept of social exclusion, monetary deprivation does not take equal precedence over other well-being criteria, as in the two African states.

As highlighted in chapter two, this distinction has important consequences for the design of poverty reduction interventions. For example, eligibility to the PNLP in CV depends on one being considered poor as per a strictly monetary threshold. Once so considered, then one may

benefit from PNLP interventions that usually address multiple dimensions of well-being.[219] In Portugal, on the contrary, interventions under the PNAI or the PNE, relative to deprivation in the various dimensions used to define social exclusion, are largely independent of the status vis-a-vis monetary income. Eligibility is more an issue of social vulnerability than of income category. Hence if one were to situate each country's approach to poverty definition, identification of the poor and characterisation of their lives in relation to the approaches in chapter two, then both CV and STP would correspond to a simplified capability, quasi-basic needs approach, whereas Portugal quite clearly represents the social exclusion line of thought. In this latter case there is more of a concern to interweave manifestations with causes of poverty – for example, inadequate housing as a manifestation of insufficient income, but also as a cause of family dysfunction and low social standing. In the two African countries, the multiple dimensions of well-being are used more to describe than to explain poverty.

These are the main difference in the analysis of poverty conducted by the development policy sectors of the three countries. In the respective ocean sectors, the situation in one of relative homogeneity and conceptual simplicity. In those cases where poverty is considered an issue in the ocean sectors of the three countries[220], it is with reference to a remote definition of the phenomenon – usually that of the respective poverty reduction strategy document - and largely confined to the issue of income, and, subsidiarily, employment. In fisheries the issue of nutrition is often also mentioned, as is safety at sea in the cases of Portugal and STP, although it is only in this latter case that an explicit link is established between being poor and facing greater safety risks at sea. Recall, in this regard, the discussion of the importance of MV Príncipe for the safety of people unable to afford air tickets between the country's two islands; and of the dismal condition of this country's fishing fleet, where generalised poverty among fishermen does not allow for the acquisition of necessary navigation and safety equipment. Other dimensions of human well-being are absent from the analyses of ocean sectors in the three countries, as well as from the respective interventions. What are possible causes and consequences of this situation?

[219] Despite the importance of this aspect for eligibility to the PNLP, this should not, however, be overemphasised. The Cape Verdean government does have numerous other programmes pertaining to dimensions that are relevant for poverty reduction – e.g. education, health, infrastructures – and which are independent of any assessment of poverty status. Hence those who are deprived in dimensions other than monetary income are also served by government action by means of non poverty-specific programmes.

[220] Recall, from earlier, that poverty is discussed in the context of fisheries and, to a much lesser extent, maritime transport in CV and STP, as well as in relation to nature conservation areas, in particular in this latter country. In Portugal poverty is not a specific concern for ocean sectors.

Two reasons may be offered for the first question. First, ocean policies are largely steered by sector professionals, and, at least in the studied countries, harmonisation with other sectors – specifically with the development policy sector - is largely non-existent.[221] Hence richer, multi-dimensional views on poverty, which are typically the domain of this latter sector, hardly ever permeate analyses and policy-making in ocean sectors. The second reason, which may be regarded as a consequence of the former, it that, assumedly, it is not the purpose of ocean policies to address well-being concerns other than those immediately related to the core of ocean activities. And, predominantly, these concerns are income, which results from employment and from profits, and, in the case of fisheries, nutrition. Safety often enters the equation in terms of protecting human life and property, but, as noted above, seldom with explicit links to poverty. The belief appears to be that other dimensions often associated with ocean activities – self-realisation, social and cultural identity – are clearly secondary, in a variant of 'economic determinism' applied to ocean policy-making where income is king. Conservation policies are, in this regard, different, but only because this concern with income is replaced by a concern with conservation, ocean sectors' objectives occupying an inferior rank altogether.

As for consequences of this largely uni-dimensional perspective of ocean sectors on poverty, those have mainly to do with the scope of interventions in these sectors. A conception that, for example, regards shipping as more than a provider of jobs and tax revenue, and instead considers its role in promoting a people's historical identity or inter-cultural exchanges is more conducive to a policy that addresses these latter aspects.

To finalise this issue, however appealing it might be to consider the multi-dimensional contribution of ocean sectors, it is acknowledged that subsistence-related objectives of productive sectors – which ocean sectors largely are[222] – occupy a prominent position relative to non subsistence-related ones. After all, subsistence is at the basis of all notions of well-being and arguably of all productive activities. And here one finds the justification for the said focus on income – and hence on employment, the most common way of earning one – as money is, in all three countries, the means of acquiring what is needed for subsistence.

[221] Recall that, while CV's fisheries policy was said to follow the country's poverty reduction strategy (the DECRP), this document was silent about fisheries' contribution to food security, which is one of CV's recurrent challenges. Similarly, in Portugal no social inclusion focal point has been established in the ministry responsible for fisheries.

[222] Nature conservation is an exception, as its aims are usually not related to production. However, their impact on ocean activities is usually via the productive aspects of the latter, be it to stop them – e.g. fishing bans – or to promote conservation-friendly versions of them – e.g. adoption of more selective fishing gears.

7.2 Approaches to Poverty Reduction

In line with the principle that "the way in which poverty is defined drives the strategy for dealing with it" (Kanbur & Squire, 1999, p.30; see ch.2), so the poverty reduction strategies in the three study countries follow from how poverty is conceptualised, explained and measured. In CV and STP these strategies are very much growth-oriented, as the respective economies are believed to be too small to generate enough wealth and employment opportunities. In the latter country in particular, a grave deficit in infrastructure is a critical constraint on economic growth and human development. In Portugal there is less of a focus on growth in the PNAI and the PNE, which in turn concentrate on ways of enabling the poor and the excluded to find a place in the economy. Hence the repeated emphasis on education and skills development, in turn leading to enhanced employment opportunities. Better education and broader skills are also the prerequisites for increasing economic diversification and productivity, two key concerns of the country's economic policies. Education also feature prominently in CV's poverty strategy, following from the recognition that many of the poor find no way into the flourishing service economy because of insufficient skills.

Public service provision is less of an issue in Portugal than in the two African states – where it is coupled to a generally lower level of infrastructure – and the proposed interventions relate more to ways of reducing costs and increasing efficiency of existing services, than to establishing new ones. In all three cases, however, underlying aims are similar, relating mainly to improving the human capital of the poor or the excluded, so that they can bring themselves out of poverty or social exclusion.

In the two African cases, the current structure and performance of the state are seen as important constraints to socio-economic progress and poverty reduction, justifying a series of measures related to state reform. It is not unlikely that this is a requirement of international development agencies which, because of their financial support to these two countries, influence the design of the respective national development strategies.

The analyses of multi-dimensional deprivation in both CV and STP then guide decisions regarding investments in a variety of sectors. In CV, these are complemented by numerous decentralised interventions carried out under the PNLP. In STP it is primarily NGOs who fulfil this role. In Portugal similar initiative exist under the PNAI, the so-called Local Social Development Contracts (*Contratos Locais de Desenvolvimento Social*), whereby public-private

partnerships are established at local level to financially support interventions targeting social exclusion.

Still in regards to the poverty reduction strategies in the three countries, it is instructive to review how they see ocean sectors contributing to poverty reduction. In Portugal, this contribution is not considered, neither in the PNAI, nor in the PNE. In CV's DECRP mention is made of the importance of the maritime sector for international trade and economic growth in general, and for reducing territorial asymmetries, enabling the redistribution of development benefits to peripheral, less prosperous islands. Tourism is seen as a key vector for the country's development, but linkages to ocean and coastal environments and activities are barely touched upon. The Santomean poverty reduction strategy is bolder relative to the contribution of fisheries, arguing for increased production and value creation in the sector in order to raise incomes and expand employment, and ultimately improve the living conditions of coastal communities. In the maritime sector reference is made to improved inter-island services, as well as, briefly, to the Fernão Dias container hub, itself not a poverty-driven project, but one capable of generating important earnings in the broader economy. The same is true of offshore oil exploitation, which the strategy is generally silent about, presumably because future prospects for this sector were very uncertain when the strategy was drafted.

The contribution of ocean sectors to poverty reduction in each country was reviewed earlier, at the end of the respective chapters. In what follows, the salient differences between these contributions are discussed, preceded by a review of the poverty situation specific to those sectors.

In all three countries, poverty in fisheries is found primarily as income deprivation among fishermen and (predominantly female) fish vendors, who gain too little from their poorly profitable activity to escape poverty. Low overall profits result from small catches and low product value, compounded by irregularity in catches and sales. All these situations are most common among small-scale artisanal fishermen, and it is here that poverty incidence in fisheries is highest. Recall that in STP virtually all fisheries fall into this category, implying that poverty cuts across the whole sector.

There is, in CV and, especially STP a group of particularly disadvantaged fishermen, namely previous rural workers who lost their jobs and who turn to fishing as an occupation of last

resort. In some communities in CV – such as Tarrafal – it is not uncommon that farmers complement their meagre earnings from agriculture with some small-scale fishing.

Recurrently low profits and inability to access credit results in a generalised lack of capital to invest in improvements in fleet and fishing gear to enable greater catches,[223] or in equipment for post-capture processing to enable an increase in the value of fishery products. This problem affects mainly CV and STP. A related problem trapping Portuguese fishermen in poorly profitable sales is, as mentioned earlier, their non-participation in post-capture activities where most of the added value of seafood is generated.

In CV the difficult situation of small-scale fisheries leads some – mainly younger – fishermen to accept employment on board foreign fishing vessels. While their earnings cannot be considered bad – wages start at close to 500 Euros per month (J. Lima, pers.comm.)[224] - working conditions have been described as very bad, occasionally accompanied by delays in the payment of salaries (C. Oliveira, pers.comm.).[225]

Situations of monetary deprivation in fisheries are often chronic due to the low professional mobility of fishermen, a problem that is particularly acute among older fishermen in Portugal, where, overall, the labour market is more stratified and specialised. Formal educational attainments are low, as is skills diversification, making reconversion to other professions only possible within low-skilled, poorly paid activities (J.Lopes, pers.comm.; see Ferreira, 2000).[226]

Among older fisheries professionals, another problem, which is common to all three countries, is severe economic vulnerability because of very low or non-existent old-age pensions. This extends, in CV and STP to younger professionals, who, overwhelmingly, are not covered by any social protection system. As discussed earlier, in Portugal retired fishermen sometimes need to continue fishing in order to complement pensions that are too low.

In the two African states, and especially in STP, poverty in fisheries is visible as severely degraded fishing communities, with very low levels of infrastructure and public service provision. Government presence in many remote coastal communities is barely noticeable.

In these two countries lack of safety at sea is a recurrent problem, by virtue not only of insufficient navigation and safety equipment in fishing vessels, but also of insufficient means

[223] Recall that, in Portugal, this possibility is severely conditioned by effort restriction regulations of the CFP.
[224] José Lima, LIMAGE Agency, personal communication on 6 January 2010, Mindelo, SV.
[225] Celestino Oliveira, personal communication, n.33.
[226] João Lopes, personal communication, n.103.

for search and rescue at sea. As discussed earlier, the former insufficiencies result to a large extent from the limited financial capacity of most fishermen. A comparable situation was found in the merchant fleet of these two countries.

Finally, there is in Portugal a noticeable decay of socio-cultural traditions and knowledge associated with fishing, following from the decline of the sector in the past three decades.

In the maritime transport sector one cannot speak of specific types of poverty affecting it. It is known to the author that, at least in Portugal, deckhands occasionally have difficulties finding suitable jobs at sea, but it is not known whether or not these situations are associated with long-term unemployment or with poverty. It is also a fact that, especially in Portugal, lower-ranked seafarer posts increasingly face competition from nationals from other countries, notably CV. Similarly, in STP there are no forms of poverty that one can reasonably associate with the offshore oil sector.[227]

Poverty associated with marine conservation is not poverty in this sector, but in the activities that conservation affects. Hence while it makes sense to speak of poverty *in* fisheries, in relation to conservation it makes more sense to speak of poverty *because of* conservation. In neither of the studied countries are there any unequivocal cases of poverty because of marine conservation. There is surely widespread rural poverty around protected areas in both CV and STP, and even, although to a minor degree, in Portugal. But there is no evidence that there is any causal relation between poverty and nature protection, in CV because protected areas are not yet operational, and in STP because the few people living on the fringes of the Ôbo parks have not yet been subject to important restrictions to their livelihoods.[228] In Portugal, where restrictions on commercial and recreational activities have already been implemented in a number of places, no evidence of them leading to poverty exists, despite claims in that direction by former users of the LSMP.

Turning now to the proposals contained in the ocean policies in the studied countries, and starting with fisheries, an important difference is that, in Portugal, the sector has no room to grow, whereas in CV and STP it is precisely growth in effort and catches that will enable the sector to realise its poverty reduction goals. In Portugal, fishing is largely restrained by resource conservation and capacity reduction imperatives of the CFP. Those professionals who,

[227] In fact, one can hardly speak of an oil sector in STP, as all oil-related activities have so far been limited to offshore surveys conducted by foreign companies, and legal-administrative procedures carried out by the government.

[228] Recall that the Ôbo parks are inhabited.

today, face difficulties in securing a livelihood from fishing cannot reasonably expect to improve their earnings by catching more fish. Alternatively, fishermen's earnings could be improved by their greater involvement in the value chain of fishery products, but, as discussed earlier, this is a strategy that the current government does not seem very keen on pursuing.

In the two African states, the situation is significantly different. First, there is the explicit recognition that poverty is a problem in fisheries, something that is absent from the Portuguese case. Indeed, poverty analyses in both CV and STP highlight the fact that fishermen and fish vendors are among the poorest groups in society. The respective fisheries policies contain thus a number of measures meant to reduce poverty in the sector. As said, this is to be achieved primarily by increases in effort and catches, which is another important difference relative to the Portuguese situation. As the fisheries strategies of the two countries recognise, this expansion of effort needs to be regarded with caution, as many near-shore fishing grounds typically used by poor fishermen already show some signs of overexploitation. This justifies the calls for that expansion to take place in fishing grounds further offshore, something that poses additional difficulties to poor fishermen lacking vessels and equipment for longer fishing trips. Given the generic lack of capital among Cape Verdean and Santomean fishermen, this strategy is not feasible without external funding or facilitated credit to cover those expenses. The former option is the one preferred in STP – via donor-funded projects – whereas the Cape Verdean government seems more keen on pursuing the latter, via the revised fisheries development fund.

The government strategy in CV and STP to reduce poverty through developments in fisheries also involves measures to increase the value of fishery products. Recall that, in these two countries, the only intermediaries between fishermen and consumers are the fish vendors, themselves very often the wives of fishermen. This implies that, as it stands today, an increase in sales value of fish results in an increase in income of fishing-dependent households.[229] The strategy carries obvious monetary benefits for these households, and, to the extent that the strategy involves better handling, processing and storage of fish, it further results in reduced waste. The downside of higher-valued fishery products is that individuals or households who are mere consumers of fishery products, will end up buying more expensive food. For poor consumers unable to accommodate the added expenditure, this might imply reduced intake of animal protein. Recall that, in both countries, fish is a crucial source of protein for the poor. In

[229] Recall, also, that this is not the case in Portugal, where intermediaries are often large food retailers with few, if any, other linkages to fishing.

Portugal, the large differential between producer and consumer prices – sometimes as high as ten times – is neither defined, nor captured by fishermen, hence measures to facilitate fishermen taking over the role of intermediaries may well give them a larger share of that differential without necessarily resulting in higher consumer prices.

None of the countries assign any role to aquaculture in poverty reduction. The proposed expansion in this activity in Portugal is expected to take place largely by means of technological innovations, hence with little potential for job creation. What is more, new facilities usually occupy abandoned salt pans, thereby excluding the need for construction works, which could offer temporary employment to less skilled workers.

As regards the maritime sector, the strategies in the three countries are fairly similar. All involve sizeable investments in port infrastructure and equipment, with the fundamental aim of expanding transport and logistics services. It is believed that this not only generates income and jobs in the sector, but also stimulates the economy as a whole. In CV and STP, adequate port infrastructure on all islands is seen as necessary for overcoming the isolation and relative disadvantage of peripheral regions. A comparable concern animated the expansion of the port systems in the two Portuguese archipelagos of Madeira and Azores four decades ago. A difference in the degree of implementation exists, however, between those two countries. While in CV an ambitious programme of port works is currently being implemented, in STP there is little in the way of improvements. The port of St. António in Príncipe, in its semi-abandonment, is an expression of this lack of implementation.

The medium- to long-term ambitions of the governments in these two countries are very similar, involving the construction of very large container transshipment hubs serving a wider regional market. Here STP appears to have the upper hand relative to CV, with construction of the Fernão Dias terminal expected to begin in 2011. In Portugal, most investments in ports focus on efficiency gains and multi-modal integration, although, in Sines, the expansion of the container terminal – again a transshipment hub – is currently taking place.

In relation to shipping, a common feature in all three countries is the non-involvement of the state in commercial operations. The reasons for this are different, though: in CV it results from a conscious strategy by government, that postulates that operations are the realm of private investors; in Portugal it is a consequence of strict EU guidelines on the nature and size of state support to shipping; and in STP it follows from the lack of state funds to support such type of

investments. There is thus little, if anything that states can do to create jobs in shipping, as this mostly has to do with decisions and performance of private operators. Even government interventions relative to the promotion of seafaring careers are generally timid in CV and Portugal, and, to this author's knowledge, completely absent in STP, where no nautical academy exists. However, the fact that such careers may and, at least in CV, do constitute employment opportunities for a considerable number of people is not to be overlooked. As discussed earlier, both in CV and in Portugal deck positions are viable alternatives for individuals lacking the skills and education enabling them to find jobs on land.

One also finds similarities between the three countries in how marine protected areas are believed to contribute to improving the lives of people whose livelihoods depend on the resources to be conserved. Unanimity exists here in relation to the possibility of converting environmentally damaging activities into sustainable, conservation-friendly ones; of expanding tourism activities linked to the conservation area, with local people directly involved in these activities; of these people establishing new businesses associated with the expanding tourism; and of a healthier environment actually becoming more productive which, in the long-run, results in higher earnings from controlled resource exploitation. There is, as yet, no convincing evidence of these assumptions from any of the studied countries.

An important difference for this discussion is that poverty is hardly part of the equation in Portuguese MPAs, whereas, recognisably, it is of critical importance in CV and STP. Hence, in these two latter countries, impacts of conservation on poverty, as well as the potential of natural parks to alleviate poverty are being considered in the design of the respective management regimes. It remains to be seen how well these two states fare in actually using protected areas in general, and MPAs in particular, to improve the lives of affected poor populations. In Portugal, as the LSMP example illustrated, this is not necessarily the case. The socio-economic impacts of the park, which some believe are sizeable, are not being quantified in any manner, neither by the park, nor by any entity concerned with local development.

Another difference is found in the degree of progress in the implementation of marine conservation areas in the three countries. In CV these areas can only be said to exist on paper, and the two most emblematic MPAs are currently entangled in legal revisions. STP is taking its initial steps in the management of the two very large Ôbo parks, the marine component of which is relatively small. Portugal has already several years' experience in MPA management,

from marine reserves where human presence was never an issue, to cases such as the LSMP where confrontation between park and users is a reality.

7.3 Evaluating the Impacts of Ocean Policies

The final theme in this reflection is taken from the conclusion of chapter three, where it is maintained that evaluations of human development impacts of ocean policies are neither frequent nor systematic. In particular, to this author's knowledge, national governments in general do not conduct studies of this type other than in the context of international development cooperation programmes, and even here not frequently. The situation in the three study countries is not any different.

In CV, follow-up of implementation of the PGRP is not being conducted, although yearly reviews are stipulated in the document. The INDP conducts occasional socio-economic surveys of fishing communities, but does not have a monitoring programme in place to evaluate impacts of fisheries-related interventions. In the maritime sector there is no impact evaluation. The effects of port developments in the peripheral islands would be interesting to evaluate though, for their expected relevance for socio-economic development and poverty reduction. Monitoring of MPA impacts will not take place before the parks are established in practice and some form of management is put in place.

In Portugal, regular monitoring of fisheries and maritime policies is carried out, in the former case involving the publication of yearly implementation reports of the PO-P. In both cases, however, these reports are mere assessments of programme actions and expenditure, without any concern for the respective impacts on targeted populations or the country's broader economy. Because poverty is not a specific concern in any of these sectors, it is not discussed at all. In marine conservation, as the LSMP illustrates, there is not socio-economic monitoring in place.

In STP there exist no government policies for fisheries or maritime transport, and consequently no monitoring of the respective implementation or impacts. No impact evaluation of other, smaller interventions in any of these sectors is known to this author. Management of nature conservation areas is in its infancy, and it is thus unlikely than any evaluation of the different proposals contained in the Ôbo park management plans has already been carried out. Once they are, and considering the contents of these plans, poverty-relevant domains are expected to

be considered, such as changes in income or skills development from some of the proposed activities.

The type and extent of policy evaluation is necessarily conditioned by the availability of funds. In this regard, studying dedicated subsets of the population with a specific set of indicators is particularly costly. Poverty or well-being impact evaluations in ocean sectors are one such case, and this might justify why they are not performed regularly. As discussed earlier, the reason for this might also be that the improvement of well-being and the reduction of poverty are not considered core objectives of policies in those sectors, thus not justifying additional efforts and investments for their measurement. Recalling, from the introduction, that humans engage in ocean activities to achieve objectives related to well-being that they 'have reason to value'; and that a state's function is primarily to create the conditions for individuals to achieve these objectives, this author maintains that ocean sectors do have a role to play in advancing objectives relative to human well-being and, consequently, to poverty reduction, as the latter is deprivation in the former. According to this premise, failure to address the impacts of ocean policies on well-being and poverty deprives those designing and evaluating these policies of important information relative to objectives that are central to public policy-making in general, and ocean policies in particular.

8. Conclusion

This final chapter starts by summarising the main findings relative to the harmonisation of ocean and poverty reduction sectors in the three study countries. It goes on to relate the key points from the conceptual discussions in chapters two and three to the findings from the three case-studies. It closes with a brief reflection on the main limitations of this study.

This study set out to investigate linkages between the management of ocean resources and poverty resources in lusophone countries. To this end it reviewed the current status of ocean sectors and the poverty situation in CV, Portugal and STP, discussing the most relevant interventions in these two policy domains. The contribution of each country's ocean sectors to poverty reduction efforts was assessed, as was the degree to which these sectors are included in the countries' poverty reduction strategies.

It was found that the degree to which poverty permeates ocean policy-making is largely a function of how important an issue poverty is in each country in general, and in the different ocean sectors in particular. Hence in Cape Verdean and Santomean fisheries, where poverty is an explicitly recognised problem, measures are proposed in the respective policy to reduce poverty, in particular among fishing communities. That fishery resources in these countries are assumed to be in a sufficiently healthy status to accommodate additional effort is critical for governments' strategies. These rely on larger catches and higher sales profits to achieve the envisioned poverty reduction objectives in the sector. In Portugal, where no links between ocean sectors and poverty or social exclusion are explicitly acknowledged, ocean policies are silent on these phenomena.

In those cases where links between poverty and ocean sectors is not explicitly recognised, these may still – and usually do – play a supporting role in poverty reduction. This is what has been observed in maritime sector policies in the three countries, where large-scale interventions aiming at medium- to long-term structural changes in the economy are also expected to result in more immediate employment and income opportunities for the poor.

The promise of marine conservation areas contributing to improved livelihoods of the poor is yet to materialise in the three countries. Cape Verdean MPAs have been forced into a dialogue with powerful tourism interests and have not yet been assigned an explicit role in the country's

broader development process. Portugal has seen its protected area policy be severely criticised on account of its alleged insensitivity to the needs of affected populations. And STP is taking its initial steps in what appears to be a careful attempt to balance nature conservation and poverty reduction imperatives.

Inter-sectoral harmonisation across the 'ocean policy – development policy' divide is largely absent in all three countries. No formal structures exist to facilitate it, resulting in ocean sectors not featuring prominently in poverty reduction strategies; and in poverty being treated rather superficially in ocean policies. An important consequences it that poverty-ocean linkages are feebly explored in analyses and in policy design. Exceptions have been found in the two proposals for the future Santomean fisheries policy and in the Cape Verdean transport strategy, which largely follow from measures contained in the poverty reduction strategies of the respective countries.

A related weakness in the studied cases is that monitoring and evaluation of well-being and poverty impacts are largely absent from ocean policy making and implementation. This is arguably the single most relevant area for future research related to the theme of this study, given the generalised lack of experience in evaluating such impacts in large-scale ocean policy interventions. In particular, expanding the number of dimensions against which human well-being and poverty have been assessed in the few studies on this subject is seen as especially relevant for a better understanding of the effects of decisions related to ocean resource management on the lives of affected populations.

The fundamental concern of this study – the role of ocean sectors in poverty reduction efforts – is justified by what this author considers to be poverty's defining feature: its 'absolutist core' of intolerable deprivation. It is the notion of a threshold below which human condition cannot be accepted that awards poverty reduction its moral imperative. This, in turn, justifies that sectors which, according to the dominant political conceptions are typically not related to poverty reduction, be mobilised to contribute to those efforts. If, as quoted from Lister (2004, p.37; see chapter two) there is a *de facto* 'moral and political imperative' to take action to eliminate poverty, then people, in their individual and collective efforts – of which ocean activities and the respective policies are one particular expression – should consider whether any such anti-poverty 'action' is possible to take. Any other conception of human condition that lacks that

threshold, that upper limit of the unacceptable, also lacks the moral strength to force this action. In brief, it is poverty's 'threshold effect' that gives poverty reduction its normative power. It is then this normative character that justifies this study, and the degree to which it is acknowledged in ocean sectors that constitutes its main concern.

On the other hand, and having considered poverty's moral imperative, this study is only relevant precisely because ocean sectors and ocean policies are not concerned primarily with poverty reduction. If they were, the issue worth investigating would not be one of *whether* these sectors have a role in poverty reduction, but rather one of *how well* they perform that role.

That ocean policies predominantly address issues other than poverty reduction has been shown in all three case-studies. In general, they are concerned with ways and means of regulating access to and use of marine and coastal resources and spaces. It was then seen that, in instances where this regulation is seen to impact on or be impacted by well-being and poverty, measures are proposed which explore the potential of ocean activities to address these two aspects. In other situations, however, resources are so compromised that their conservation and recovery has to take precedence over all other concerns.

At first sight, the need to strike this balance between mutually exclusive objectives appears to deny the superior moral urgency of poverty reduction. On the other hand, it is not less true that ecologically unsustainable resource exploitation, even if motivated by the need to escape poverty, is not a viable avenue for improving well-being, at least not in the longer run. The realisation of this fact is what forces the compromise between conservation of natural resources and improvement of human well-being that one observes in the fisheries and marine conservation policies of the three countries. The status of the resources and the severity of poverty determine the balance in each individual case.

It is not only purely environmental concerns that, in political practice, lower the (moral) precedence that poverty reduction has over other societal objectives. In general, the guarantee of the fundamental functions of the state takes precedence over poverty reduction, as these constitute the basis for ensuring minimum levels of dignity and well-being for society as a whole, rich and poor alike. Of those functions, safety and security are two that directly pertain to ocean sectors, the safeguard of which sometimes conditions the well-being of certain groups. For example, societal concerns with the security of ships and ports has led to the adoption of

measures that severely restrict the possibility of crews of go on shore, largely imprisoning them in the ship for most of the duration of international voyages.

That moral precedence of poverty is also diminished by concerns with the well-being needs of future generations, which states typically also try to anticipate. To an extent, the environmental concerns discussed above fall into this category; for example, it was seen that part of the justification for the LSMP is that conservation today will allow continued resource exploitation in the future. Another example, relating more clearly to socio-economic aspects, are the limitations on fishing fleet capacity imposed by the CFP, which are largely motivated by the will to ensure the future socio-economic viability of European fisheries.

In regards to this issue, what this study shows is that poverty reduction is not awarded precedence over other objectives in the ocean policies of the studied countries. In particular, poverty is clearly of secondary importance relative to issues of resource conservation and broader economic efficiency of the sectors.[230] The moral imperative that the threshold of the unacceptable awards to poverty is not discernible in the ocean policies of any of the countries.

In chapter two it was observed that the concept of poverty has evolved in the course of the last six decades to include an increasingly diverse array of fundamental domains of human well-being. In recent years, this conceptual expansion has been accompanied by significant improvements in the ability to measure multi-dimensional well-being and poverty. It was also seen that, to a considerable extent, the poverty reduction and social exclusion policies in the three countries reflect that multi-dimensional understanding, which is not the case of the respective ocean policies. In these cases, in the few instances where poverty is explicitly addressed, it is discussed predominantly in terms of income and employment and, in fisheries, of nutrition. Two observations can be made in respect of this issue.

The first is that ocean policies focus on those dimensions of well-being that more directly pertain to the core of the respective activity. In productive sectors such as ocean sectors this core is made up primarily of concerns with income and subsistence. The focus on these two dimensions is, in turn, very much in line with the continued dominance of monetary-subsistence conceptions of poverty in the development discourse, as concluded in chapter two.

[230] It should be noted, however, that both of these two issues are necessary conditions for the future poverty reduction potential of ocean sectors.

The abridged conception of poverty found in the analyses of ocean sectors in the three countries finds its justification in what still is the dominant understanding of that term.

On the other hand, following from the principle that how poverty is defined matters for policy design, it was maintained earlier that ocean policies that do not recognise poverty's multiple dimensions also fail to propose measures to address them. This too was observed in the three countries studied here.

One issue not touched upon in the discussions of poverty in the maritime sectors of the three countries is that of who should define poverty.[231] In development circles this is an issue that is regularly debated, mainly because of the notion that the definition of poverty varies with who defines it. In this regard, in none of the study countries are poverty analyses in ocean sectors conducted from within, and instead some other exogenous definition of poverty is adopted, generally borrowed from the country's poverty reduction strategy.

The adoption of a common, cross-sectoral definition of poverty has advantages for unequivocally demarcating the phenomenon, for establishing a common understanding of it and, consequently, for harmonising poverty-related interventions across different sectors. On the other hand, a one-size-fits-all definition might hide aspects that are important for the very understanding of poverty in specific situations. Two examples from ocean sectors illustrate this possibility.

The first example refers to minimum required levels of safety in fishing. A first view on this matter will hold that all efforts should be made for this activity to attain levels of personal safety on par with those of other professions. Every possible action will thus be taken to maximise safety on board. A different view will hold that to challenge the risks of the marine environment is integral to fishing and is an inalienable aspect of the identity of fishermen and of their professional satisfaction (see Pollnac & Poggie, 2008). The first view might regard fishermen as poor if their job safety is deemed inadequate, whereas the latter will classify as poorer fishing activities which are devoid of their adventurous and challenging character.

[231] Also in the poverty reduction strategies of these countries, it is only in CV's PNLP that, through the ACPs, an explicit mechanism exists for enabling the poor themselves to identify relevant domains of well-being that the programme should support. Recall that some of the initiatives funded by this programme directly pertain to fisheries and to fishing communities.

Another example is that of seafaring professionals – crews of distant-water fishing fleets or international seafarers in particular – who often are away from home, and usually from society in general, for extended periods of time. Does one have to regard their family life as necessarily poorer? Can it ever be reasonable to speak of social exclusion is such cases? Answering these questions requires an understanding of broader professional and personal conditions of these workers and of how (apparent) deprivation in dimensions such as these relate to other aspects of their lives. This is to say,it requires a tailored definition of well-being and, consequently, of poverty.

In brief, it appears that, while a common cross-sectoral understanding of poverty and well-being is desirable for the purposes of poverty analysis and programme design, a certain degree of sectoral or geographical specificity is beneficial to account for important variations in the valuation of the different aspects of people's lives. In the cases studied here, ocean sector-specific understanding and analysis of poverty are largely non-existent. This, in turn, reflects on the limited scope of poverty reduction measures in the respective policies.

There is one other problem with adopting different definitions of poverty, namely that the term loses its power to explain and describe a specific type of situation. Earlier, in chapter two, it was seen that the broadening of the meaning of poverty beyond the monetary-subsistence and into the multi-dimensional space is to blame for the current polysemy of the term. Of relevance for this study – and for policy-making in general – is the issue of how far this dilution of the explanatory power of the word poverty undermines its ability to mobilise political action. Although not explored in this study, it would be interesting to investigate what role the limited understanding that ocean sectors seem to have of poverty plays in the level of attention that poverty reduction received in those sectors' policies.[232]

One last issue to consider it the role of capital for poverty reduction in the ocean sectors of the study countries. In general, poverty reduction strategies are built on the principle that the state, rather than pulling people out of poverty – for example, by means of social transfers - should put in place the conditions enabling the poor to take themselves out of their poverty. This is what motivates investments in social services and infrastructure, lack of which is seen as a

[232] Conversely, the question may be asked in relation to the role that poverty reduction policies assign to ocean sectors, considering the equally limited understanding that that former sector has of these sectors. As discussed in the previous chapter, both questions relate to the limited integration between development and ocean sectors in the three countries.

hindrance in the way of the poor out of their poverty. In the ocean sectors of the countries reviewed here, lack of capital is one such hindrance, a situation that is particularly grave in CV and STP. In Portugal capital is more readily available, both because society is wealthier and because public and private credit systems are more developed.

In the two African countries, examples where lack of capital locks people in poorly profitable activities and often in poverty include fishermen who cannot afford larger boats and more powerful engines, as well as safety and navigation equipment to exploit richer ground further offshore, which in turn would enable them larger landings; fish vendors lacking equipment for adequate storage and processing of fishery products, and who, consequently, have high levels of waste (unsold fish) and can only sell low-value products; merchant ship-owners unable to invest in new vessels to improve service efficiency and to expand into international routes; or people living in and around protected areas who do not have the means to invest in tourism activities in order to benefit from the affluence of visitors to the area. In all three countries, the measures proposed relative to capital needs of ocean sector professionals are not very determined and generically of assistentialist type. In order to provide durable support to economic activities, they should clearly be used as catalysts to facilitate sustainable entrepreneurship and business development.

It is acknowledged that this research is limited by a number of factors, of which the following deserve mention. Firstly, this study is predominantly an analysis of policy processes conducted from outside these very processes and away from the respective political circles. Although this fact allowed the author greater objectivity relative to the subjects of study, it also results in the author missing out on the finer details of these processes that only an inside view can detect, and which are neither disclosed by the interviewees, nor described in the literature. In this regard, the author is very much conditioned by the information conveyed by these two sources.

Secondly, the study is a snapshot of the socio-political situation in the study countries in a given period in time. Moreover, the consulted sources often did not cover the same period of time. On the whole, the information used for this research and conveyed in this document relates to the decade between years 2000 and 2010 and is deemed actual relative to this period.

Thirdly, although this research is based on visits to the study sites and on the broadest possible body of literature, it is acknowledged that many details of the phenomena and processes

described in this document have not been captured. Others have not been included in the document. Hence the descriptions contained here unavoidably are simplifications of a reality that is much more complex. The resulting analyses are thus one of several possible interpretations of that reality.

A fourth factor, related to the previous one, is the amount of detail that went into each case-study. The author's opinion is that the contrasts that emerge from a comparative perspective enable a better understanding of each individual case. The downside it that the amount of detail that can go into each case-study is reduced, as might be the depth of the respective analysis.

In regards to the choice for multiple case-studies, the author would like to conclude that it has served two main purposes. First, it enabled the exploration of conceptual constructs in three distinct settings, thereby making a more thorough and varied inquiry into their applicability possible. Second, the differences between the three countries offer novel perspectives on each individual case, helping to clarify certain aspects and making descriptions and analyses more compelling (Yin, 1984). For example, the implications of the poor status of fish stocks in Europe is understood better when one contrasts the CFP-imposed effort and capacity restrictions in Portugal with the situation in CV and STP, where fisheries are expected to contribute to poverty reduction precisely by virtue of greater fishing effort and larger landings.

On the other hand, it is this author's view that there is limited usefulness for policy-making in a multi-country comparative perspective, primarily because of limitations to generalising findings from one setting to another (see Stoecker, 2006). While this may serve the purposes of benchmarking a government's performance in a given domain against that of others; and of inspiring novel ideas on how to address a given issue, it is usually the case that policy-making at domestic level is overwhelmingly determined by the domestic setting and, more importantly, by the will of a country's population.

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Annex I

This annex provides details on the contents of the interviews conducted by the author in the three study countries. In several instances – especially in CV and STP - the interviews served for the author to gather documentation not available elsewhere. In some cases, contacts via e-mail or telephone were established after the interview with the aims of clarifying or expanding on specific topics, or requesting additional documentation.

All interviews were initiated with a brief presentation by the author of the nature and purpose of the investigation. As for the topics discussed in the interviews, the ones conducted for the LSMP study included: perceived impacts of and satisfaction with the park's management regime; participation in and influence over management of the park; relative impacts of the different human activities on the marine environment in the park; and perceived benefits of the park, in particular in terms of restoration of the marine environment. Interviews with representatives from economic sectors—primarily fisheries—also addressed the characteristics of the activity—e.g., type of fisheries, labour conditions, revenues—and how these were affected by the establishment of the park.

Sample questions included:

- Who and how many are the fishermen whose livelihood depends on fishing in the park? Are other members in their families also active in fishing?
- What are the perceived impacts of the POPNA on the lives of these fishermen? In particular, how has fishing been affected?
- (Equivalent question for recreational activities in the park) How has your activity been affected by the park's regulations?
- What systems are there to support those who have had their livelihoods affected by the park? Are there any viable alternative livelihoods?
- (In particular in respect of fisheries) Is there poverty in this sector in the area of the park? If so, how do you see that the park will impact on poverty?
- What is the average income of professionals in the sector? Any significant differences between figures in this area and others areas in the country?

- How do you foresee the future of the sector in this area, given the current management regime in the park?
- (In particular in respect of fisheries) What pension savings schemes are there in fisheries?
- (Question posed to public authorities) How would you characterise the fishing population in the area in terms of their socio-economic status in relation to the population in general? Are there any specific studies or interventions pertaining to the socio-economic conditions of that population?
- On a regional level, what are the benefits so far of the establishment of the park?

In respect of the management of the park:

- What is the generalised attitude towards the park, its management plan, and the respective administration?
- How would you classify your ability to influence decision-making relative to how the park is managed?
- What are your main disagreements with the POPNA? How would you like to change it?
- What possibilities are there for your sector to take advantage of opportunities created by the park? What developments have been observed in respect of these?

In CV and STP, interviews with representatives from institutions in the ocean sectors covered issues of the characteristics of the sector; the key problems of the sector; the socio-economic and poverty situation of professionals in the sector; and government policies for the sector. Interviews with fisheries professionals also discussed the issue of fisheries agreements with the EC. Interviews with representatives from producer organisations (e.g. fishing associations, seafarers associations) focused on the history, membership and actions of the organisation, on the local characteristics of the activity and on government actions in the sector. Interviews with fishing associations also addressed the issue of poverty in the community and the role of the association in poverty reduction projects.

In these two countries, interviews with representatives from institutions in the fields of development and poverty reduction focused on the nature and extent of poverty in the country

or region (e.g. in the island of Príncipe, STP or in the island of Sal, CV), on existing programmes for poverty reduction and on linkages between development and poverty reduction programmes and ocean-related activities.

Sample questions included:

- How would you describe the functioning of the sector in the country? What are its main problems, and what management interventions are being put in place to address these?
- How would you classify the socio-economic status of the people engaged in the sector? Are there cases of poverty associated with the sector?
- (Alternatively) How would you describe poverty in the country / in the area? What measures are being implemented to address poverty?
- To which extent are policies for the sector aligned with the poverty reduction strategy in the country? (Alternatively: What role has been reserved for fisheries/shipping & ports/tourism/nature conservation in the country's poverty reduction strategy?) Could you describe the existing institutional arrangements for inter-sectoral coordination?
- (Question posed to state agencies) What measures are there in the policy for the sector that address poverty and socio-economic development?
- Common questions posed to fishing associations:
  - Could you describe fishing activities in this area? What are the main difficulties faced by those engage in fishing? And by the community in general?
  - What is the main purpose and the core activities of the association? How has it evolved since its creation? What are your future plans?
  - (In particular in respect of fisheries agreements)[233] What are your views on fisheries agreements with foreign fishing fleets? Have there been any interactions with foreign vessels? Are there any people from the community employed on board these vessels? If so, under what conditions?

[233] Fisheries agreements have not been dealt with at length in this thesis. However, the issue was discussed with people engaged in fishing in CV and STP, and data was collected from authorities in these two countries, as well as in Portugal and Brussels. This investigation led to the production of a research manuscript on EU fisheries agreements with those two countries, mentioned in Annex II.

- To which extent do people in the community contribute to fisheries policy-making? How would you classify the concern of state organs with issues specific to your community? What support does the community receive from the state (specific to the sector)?

- (Questions posed to maritime authorities) What role does your organisation play in maritime surveillance in the country? What are the main problems encountered in carrying out your duties? What are the capabilities in terms of search and rescue at sea? How are foreign fishing vessels monitored and controlled? What about domestic fishing vessels, in particular artisanal craft?

- (In particular in respect of nature conservation initiatives) What management measures are there for the protected area? How are these expected to affect the lives of people who depend on the area's resources? What expected benefits are there for these people, in particular for the poor? What role have existing tourism establishments so far played in creating jobs and income for local populations?

- (Questions posed to individuals engaged in coastal management and protection) What are the country's main environmental problems, in particular affecting coastal and marine environments? How would you describe existing institutional arrangements for coastal zone management?

The semi-structured format of the interviews and the open-ended nature of most questions led frequently to issues other than those directly targeted by the questions also being discussed.

The schedule of interviews conducted in person by the author was as follows, in chronological order:

Name of interviewee	Institution and place	Date
João Nunes	Mútua dos Pescadores, Sesimbra, PT	17 Nov 2009
Conceição Loureiro	C.M. Setúbal, Div. Inclusão Social, Setúbal, PT	17 Nov 2009
João Ventura	C.M. Sesimbra, Divisão Cultura, Sesimbra, PT	17 Nov 2009
Lia Vasconcelos	FCT-UNL, MarGov Project, Costa de Caparica, PT	17 Nov 2009
Carlos Macedo	Artesanalpesca, Sesimbra, PT	18 Nov 2009
Carlos Fernando Macedo		

Name of interviewee	Institution and place	Date
António Júlio Cruz	Clube Naval de Sesimbra, Sesimbra, PT	18 Nov 2009
Miguel Henriques	ICNB – Parque Natural da Arrábida, Setúbal, PT	18 Nov 2009
César Monteiro		25 Mar 2009
Ricardo Santos	Sesibal, Setúbal, PT	19 Nov 2009
Rita Vaz	C.M Sesimbra, Div. Acção Social, Sesimbra, PT	19 Nov 2009
António Messias		
João Narciso	Ass. Armadores Pesca do Centro e Sul, Sesimbra, PT	19 Nov 2009
Arsénio Rafael		
António Marques	C.M. Sesimbra, Gab. Apoio à Pesca, Sesimbra, PT	19 Nov 2009
Tiago Cagica		
Jó Pinto	Zuca – Clube de Pesca Desportiva, Sesimbra, PT	21 Nov 2009
---	ANARESE, Sesimbra, PT	21 Nov 2009
José Saleiro	Vertente Natural; ACOMTS, Sesimbra, PT	Dec 2009
Joana Hancock	Turtle Foundation, Cascais, PT	
Adelaide Ribeiro	UNDP, Praia, ST, CV	05 Jan 2010
Luciano Fonseca	FAO, Praia, ST, CV	05 Jan 2010
Edelmira Carvalho	Direcção Geral das Pescas, Praia, ST, CV	05 Jan 2010
Liza Lima	Direcção Geral do Ambiente, Praia, ST, CV	05 Jan 2010
José Lima	Agência Limage, Mindelo, SV, CV	06 Jan 2010
Óscar Melício	Inst. Nac. Desenvolvimento Pescas, Mindelo, SV, CV	06 Jan 2010
Osvaldina Silva		
Elísia Cruz		
Benvindo Fonseca	Complexo Pesca Cova Inglesa, Mindelo, SV, CV	06 Jan 2010
Franklim Spencer	ENAPOR, Mindelo, SV, CV	07 Jan 2010
Zeferino Fortes	Instituto Marítimo e Portuário, Mindelo, SV, CV	07 Jan 2010
Carlos Brito	Associação de Pescadores de Salamansa, SV, CV	07 Jan 2010
Luis Viúla	Assoc. Armadores Marinha Mercante, Mindelo, SV, CV	08 Jan 2010
Celestino Oliveira	Associação de Pescadores de S. Pedro, SV, CV	08 Jan 2010
Nelson Atanásio	Assoc. Armadores de Pesca, Mindelo, SV, CV	08 Jan 2010
José Lopes Veiga	Inst. Nac. Desenvolvimento Pescas, Mindelo, SV, CV	08 Jan 2010
João Pires	Assoc. Marítimos de Cabo Verde, Mindelo, SV, CV	08 Jan 2010
Antero Alfama	Câmara Municipal do Sal, Espargos, SL, CV	11 Jan 2010
Euclides Monteiro		
Júlio Rocha	Turtle Foundation, Espargos, SL, CV	11 Jan 2010
Ângela Borges	União dos Operadores Turísticos, Espargos, SL, CV	11 Jan 2010
Ramiro Azevedo	Prog. Nac. Luta contra Pobreza, Praia, ST, CV	12 Jan 2010
António Monteiro	Guarda Costeira, Praia, ST, CV	12 Jan 2010

Name of interviewee	Institution and place	Date
Joaquim Tavares	Assoc. Pescadores e Peixeiras Calheta, S. Miguel, ST, CV	13 Jan 2010
Paulo Varela	Assoc. Pescadores e Peixeira Tarrafal, ST, CV	13 Jan 2010
Celeste Benchimol	WWF Cabo Verde, Praia, ST, CV	14 Jan 2010
João Pessoa	MARAPA, S. Tomé, STP	15 Jan 2010
Jorge Carvalho		18 Jan 2010
Idalécio João	Guarda Costeira, S. Tomé, STP	19 Jan 2010
Manuel Nascimento	ENAPORT, S. Tomé, STP	19 Jan 2010
José Vera Cruz	Direcção Geral Turismo, S. Tomé, STP	19 Jan 2010
Vítor Bonfim & Horácio Cravid	Direcção Geral Conservação e Qualidade do Ambiente & Parque Natural Obô de São Tomé, S. Tomé, STP	19 Jan 2010
Daniel Ramos	Parque Natural Obô do Príncipe, São Tomé, STP	19 Jan 2010
Fausto Vera Cruz	Agência Nacional Petróleo, S. Tomé, STP	20 Jan 2010
Olavo Aníbal	Direcção Geral Pescas, S. Tomé, STP	20 Jan 2010
Filinto Costa Alegre	World Maritime University graduate, S. Tomé, STP	21 Jan 2010
Sr Morais	Equador and Sonatrans agencies, S. Tomé, STP	21 Jan 2010
João Paulo Cassandra	Governo Regional Príncipe, Príncipe, STP	22 Jan 2010
António José Cassandra		
Nuno Loureiro	SADA Programme, Príncipe, STP	22 Jan 2010
Damião Matos	Direcção Regional Pescas, Príncipe, STP	22 Jan 2010
António José Cassandra	Governo Regional Príncipe, Príncipe	23 Jan 2010
José Rodrigues & Angelino Luciano	Grupo de Interesses Económicos das Palaiês e Pescadores Artesanais, S. Tomé, STP	25 Jan 2010
Osvaldo Mesquita	Ass. Comunitária de Porto Alegre, Praia Jalé, STP	25 Jan 2010
Maité Mendizabal	AECID-Spanish Cooperation, S. Tomé, STP	26 Jan 2010
Rui Vera Cruz	Capitania dos Portos, S. Tomé, STP	26 Jan 2010
António Aguiar	Ministério das Obra Públicas, S. Tomé, STP	27 Jan 2010
Filipina Rocha	Observatório de Redução da Pobreza, S. Tomé, STP	27 Jan 2010
Argentino Santos	FAO, S. Tomé, STP	28 Jan 2010
Graciano Costa	Direcção Geral Pescas, S. Tomé, STP	28 Jan 2010
...	EDF National Coordinator, S. Tomé, STP	28 Jan 2010
...	Ass. Pescadores de Praia Gamboa, S. Tomé, STP	28 Jan 2010

Table 13 - Roster of interviews conducted in Portugal, CV and STP.

Annex II

List of peer-reviewed publications by the author related to this research, in descending chronological order:

Carneiro, G., N.D. 'They come, they fish, they go.' EU fisheries agreements with Cape Verde and São Tomé e Príncipe. In review at *Marine Fisheries Review*.

Carneiro, G., 2011. The Luiz Saldanha Marine Park: an overview of conflicting perceptions. *Conservation and Society*, In press.

Carneiro, G., 2011. Marine management for human development: a review of two decades of scholarly evidence. *Marine Policy*, 35(3), pp.351-362.

Carneiro, G., 2010. A human and social development perspective on maritime policies. *WMU Journal of Maritime Affairs*, 9(2), pp.169-190.

Carneiro, G., 2010. The social dimension of Portugal's ocean policies. In: A. Chircop, S. Coffen-Smout & M. McConnell, eds. 2010. *Ocean Yearbook 24*. Boston, MA and Leiden: Martinus Nijhoff Publishers, pp.67-113.

Digital copies of these publications are included in the CD attached to this thesis. They may not be copied without explicit authorisation by the author.