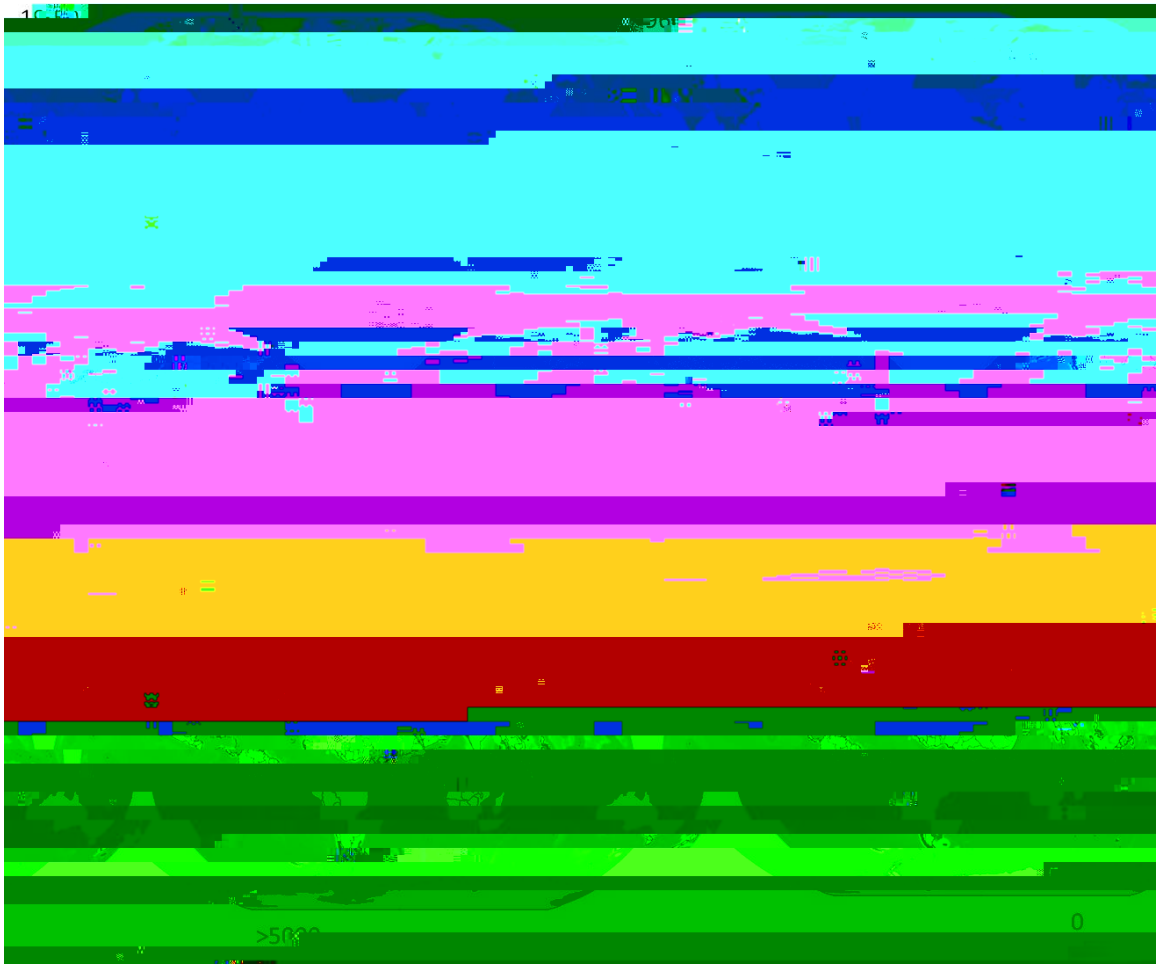
2014).T

the Southern hemisphere's share had risen to 20 per cent of the total. This change likely resulted from a combination of factors including transfer of fishing effort from north to south, overall increases in fisheries in the south and improvement in reporting systems. Nevertheless, the relative contribution to global landings from the two hemispheres has changed.



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Figure 1. Spatial distribution of average annual landed values (2005 United States dollars per square kilometre per year) by decade (from Swartz et al. 2013, with permission of Springer)

In terms of volume, the shift seen in Figure 1 is even more striking, as shown in Figure 2: the top ten capture fisheries producers include seven developing countries[3].

Indeed, net exports of fish and fishery products from developing countries have grown significantly in recent decades, rising from 3.7 billion dollars in 1980 to 18.3 billion

dollars in 2000, 27.7 billion dollars in 2010, and reaching 35.1 billion dollars in 2012. For Low-Income Food-Deficit Countries (LIFDCs) net export revenues amounted to 4.7 billion dollars in 2010, compared with 2.0 billion dollars in 1990 (HLPE, 2014). The share of exports from developing countries is close to 50 per

exporting high quality seafood in exchange for lower quality seafood (Asche et al., 2015).

Regarding the trends in world marine capture fisheries, production has levelled off as the capacity of the ocean to produce ongoing harvest is approached (FAO, 2014-SOFIA) Overall production might be increased however, if overfished stocks are rebuilt and fisheries and ecosystems are used more sustainably. This requires overall reductions in exploitation rates, achievable through a range of context dependent management tools (Worm et al., 2009)

As noted in Chapter 11, global fisheries agreements and the FAO generally utilize the concept of Maximum Sustainable Yield (MSY) as a reference point for gauging whether a fishery resource is fully exploited, overexploited, and less than fully exploited. According to this reference point, FAO classifies the status of marine capture fishery resources (Table 1).

Table 1. Status of World Marine Capture Fishery Resources 2011. Source: FAO, 2014, p.7.

Status	Percentage
Less than fully exploited	10
Fully exploited	61
Overexploited	29

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two inter-related general considerations regarding management for these ecosystem-level effects: 1) the potential impacts of fisheries themselves on the ecosystems, in order to maintain overall ecosystem function including productivity, usually referred to as ecosystem-based fishery management (FAO, 2003); 2) the interaction of fisheries with other sectors of human activity and consideration of the cumulative impact of all sectors on marine ecosystems, usually referred to as ecosystem-based management (McLeod and Leslie, 2009).

The discussion here and in Chapter 11 on full exploitation and overexploitation of capture fishery resources was essentially cast in biological terms. When examined in economic terms, the situation portrayed in Table 1 implies a loss in the potential economic returns accruing to society from capture fisheries compared to the situation where all fisheries were managed to maximize economic benefits. The maximum economic yield (MEY), when adopted as a reference point, is more conservative and reached at lower fishing effort levels than the MSY, the latter argued to be used as an upper limit rather than a management target (Worm et al., 2009; Froese and Proelß, 2010).

Translated into monetary terms, the figures in Table 1 have been estimated in some analyses to cost to the world economy in the order of 50 billion dollars per year in lost resource rent (World Bank and FAO, 2009). This implies that, the economic return from marine capture fisheries could be improved compared to the current situation. If other incentives such as subsidies of the fisheries sector are taken into account, there are some estimates that this global economic return amounts to minus 5-12 billion dollars per year (World Bank and FAO, 2009; Munro, 2010; Sumaila et al., 2012

investment would begin to outweigh the costs. Over the 50-year period, the returns would far outweigh the costs[4] (Sumaila, et al. 2012). Economic and technical considerations that arise in rebuilding fisheries were explored in additional detail in an Organisation for Economic Co-operation and Development workshop (OECD, 2012).

3. Issues in Regulation of Marine Capture Fisheries

It has now long been recognized that the inherent difficulties in regulating marine capture fishery resources are a problem of scope and management objectives in the decision-making process, and are often framed in the well-known "Tragedy of the Commons" (Hardin, 1968). When access is open to all for exploitation, incentives are created that promote inefficiencies, includ-10(re)-1( )3(e)13(0p)-4y.edf: is22 T2n.3(0p)-4y2(22 T2n

5. Space-use conflicts: industrial capture fisheries vs. artisanal capture fisheries; aquaculture vs. artisanal capture fisheries

Due to recent improvements in technology and affordability, vessel monitoring systems (VMS) are increasingly available for both large- and small-scale fishing vessels, and thus can provide geo-referenced data that accurately describe fishing areas on geographic scales applicable to MSP. Combined with validated logbook data, rich time-series data are potentially available from intensely

planning. However, considerable guidance is available on appropriate approaches that include conflict management (e.g. Ehler and Douvere, 2009) as well as enabling policy (e.g. EU Marine Strategy Framework Directive).

Marine spatial planning (MSP) is the public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process (Ehler and Douvere, 2006). It is linked to ecosystem-based management (EBM) (see McLeod and Leslie, 2009), the ecosystem approach to fisheries (EAF) (see FAO, 2003), marine protected areas (MPAs) (FAO report on MPAs and Fisheries, 2011) and similar endeavours that have the potential to assist in managing conflicts through participation among diverse stakeholders (Ehler and Douvere, 2009). Managing space use conflicts between large- and small-scale fisheries and with other sectors is an increasingly important issue in many parts of the world.

6. Gender in fisheries

On a global level, fisheries are often perceived as male-dominated, laden with culturally stereotypical images of fishermen. The term "fishing industry", for example, conjures an image that focuses attention on harvest and men's work more than the term "seafood industry" which is more equitable (Aslin et al., 2000). The involvement of women is now reflected by the increasing use of gender-neutral terms such as "fisher" and "fisherfolk" and more international discussion of gender (Williams et al., 2005). Yet recent global investigation has shown that if post-harvest (e.g., fish processing and trade) and ancillary activities (e.g. fishing inputs and financing) are taken into account, then the gendered image is quite different. Overall, women may be in the majority in fisheries, or nearly so (FAO et al., 2008). This does not take into account the growing number of women engaged worldwide in fisheries policy, planning, management, science, education, civil society advocacy and other activities related to fisheries that were previously more male-dominated.

The post-harvest situation is particularly inequitable. Women outnumber men in fish processing and trading across the world, but their informal sector activities are often not recorded, and they are invisible in national labour and economic statistics. Thus the socioeconomic contribution of women to fisheries is underestimated at national and global levels. Only a few countries in the developing world collect and use gender-disaggregated statistical data and other information data for fisheries policy and planning (Weeratunge and Snyder, 2009). Without comparative data for women and men, it is difficult in most places to determine the disparity between female and male socioeconomic activities and well-being. This scarcity of gender-disaggregated fisheries data constrains gender-sensitive policies and mainstreaming, with little action taken to address the disadvantageous position of women (Shamima, 2003).

It is widely accepted in the developing world that women strongly influence the social, economic and cultural aspects of fishing households and the industry as a whole. There are increasing numbers of women in technical, scientific and managerial fisheries jobs around the world, but this varies markedly by region. In some societies where men engage in the most conspicuous fisheries-related socioeconomic and political activities, the women are labelled "fisher wives," but the implied subordination is misleading (Weeratunge and Snyder, 2009). In Ghana, "fisher wives" or "fish mammies" support the entire small-scale fishing industry as they invest in fishing boats and gear, and provide loans to husbands and other fishers while running small socioeconomic empires without formal political power (Walker, 2001). Although addressing gender inequity is critical, interventions need to be carefully designed. 'Women in development' projects have contributed to reducing the real power that women held, for example, by introducing poorly designed credit and fish marketing schemes that exacerbate unsustainable fishing for short-term monetary gain or loan servicing.

including means to abide by regulations - and the lack of fish preserving and processing facilities was a recurring issue, especially in developing countries that are near, or trade often with, developed countries.

Contamination of fish products as well as the effects on catches caused by pollution and habitat degradation were raised at the workshops. Developing countries reported difficulties in assessing these risks and monitoring those impacts. The main focus of fish certification has been eco-labelling that addresses environmental sustainability issues. With limited exceptions, certification concerns predominantly developed countries and large-scale fisheries. Fish certification is progressively moving to include social responsibility and labour considerations, but it is unclear whether food security and nutrition considerations can or will be included in future

9. Conclusion

Fisheries around the world are deeply scribd 10(d)dfn te wshhus af 1(f)2(o)2(d s10(d)4(rnd)3

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