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Author

Elaine Stratford

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9

Think global, act local**Scalar challenges to sustainable development of marine environments**

Elaine Stratford

Among the social sciences, long-standing debates continue about the effects of economic globalisation. Part of that discussion is about the principles and practices by which to be modern *and* exhibit stewardship over economic, social and environmental well-being. Often ‘sustainability’ describes the principles of such care, and ‘sustainable development’ denotes the practices by which these are enacted.

Debating the worth and consequences of economic globalisation involves asking to what extent the state is best placed to address the challenges of modern life. This question informs concerns about democracy and citizenship. Supra-statists advocate investing more power in structures and processes of global governance and government, suggesting more centralising and authoritarian strategies for ‘the greater good.’ Sub-statists are equally committed to devolving power to sub-national systems of decision-making that privilege the local (Wapner 1995). Advocates of both positions attribute to existing state systems the vast majority of environmental woes, calling for the reorganisation of political life and the transference of power *up* or *down* spatial scales.

Differences between supra-statists and sub-statists bring into sharp relief questions about the *scale* at which sustainable development is best deployed. The catch-cry *think global, act local* captures this uncertainty, suggesting the trans-boundary character of economic, social and environmental problems and solutions, and the need to *engage and empower* via democratic and civic rights and responsibilities for sustainable development. Nowhere are such issues better etched than in relation to archetypal trans-boundary domains, the global commons, including the marine environment.

Over 70 per cent of Earth is aquatic: oceans, coasts and islands are gravely at risk from processes of modernisation and economic globalisation. Despite the proliferation of mechanisms to advance sustainable development at different scales, the evidence suggests that few goals of this agenda have been reached.

This relative failure needs to be understood and addressed. As one response, in this chapter I explore how management regimes for marine environments are characterised by an ‘implementation deficit’ (Crowley 1999) which is partly attributable to tensions across scales of governance. The implementation deficit is shorthand for the failure of formal

strategies of sustainable development to ‘put the brakes’ on environmental degradation, social dislocation and economic instability. While the deficit might be applied to various cases, in what follows I refer to marine environments, which allow an exploration of scale and some way of understanding environmental controversies.

Background to the issues

Marine environments

Marine environments inspire deep affective responses in people. They are crucial to global life-support systems and ecosystem services across the planet, their contribution to global climate regulation being especially important (McConnell 2002; Huber et al. 2003). Their biological and geological diversity spans coral reefs and estuaries, mangroves and wetlands, sea mounts, ocean trenches and other benthic domains (Summerhayes et al. 2002). Over a billion souls depend for their main sources of protein on seafood. Hundreds of millions rely on artisanal and commercial mariculture for their livelihoods (Cole 2003; Eagle & Barton 2003; Future Harvest 2003). Untold numbers are also directly and indirectly involved in illegal, unregulated and unreported fishing (Fallon & Stratford 2003). Coasts will continue to be most profoundly affected by such activities (Lindeboom 2002; Summerhayes et al. 2002). Small islands are often viewed as particularly vulnerable to climate change and sea-level rise (Pelling & Uitto 2001; Mitchell & Hinds 1999; Joost et al. 2002).

Marine environments are the life-spaces of seagrasses, algae, phytoplankton and other marine flora. Some, such as red seaweeds, may be useful in the treatment of pandemics such as HIV/AIDS (Burgess et al. in preparation; Global Campaign for Microbicides 2003; Population Council 2003; Women’s Global Health Imperative 2003). This aquatic realm is also the wellspring of rare minerals, oil and natural gas, and evidence suggests the existence in the oceans of assorted energy sources already earmarked for exploitation (Costanza 1999; Halfara & Fujitab 2002; Jones & Morgan 2003; Wells et al. 2002). Indeed, managing deep-sea mining may be especially taxing for international environmental policy communities as both private and public interests seek to maximise monetary and strategic flow-on effects of such activity (Huber et al. 2003; Smith 2003).

Among other things, marine environments are affected by military activities (Pirtle 2000); trade and the movement of sometimes very hazardous wastes (Vanderzwaag 2002); tourism (Trist 1999; Ghina 2003); and various categories of displaced persons (Pallis 2002). Significant numbers of vessels are unregistered or under flags of convenience. Their regulation is extremely difficult. Many are single-hulled and poorly maintained. Unknown numbers are involved in the illegal transportation of contraband and the illegal harvesting of marine resources (Kullenberg 2002).

Thus marine environments are increasingly at risk (Huber et al. 2003; Smith 2003). As the risk grows so does the number of strategies of global governance to address it. Many schemes position sustainability as a dominant ethical guideline (or way of being) and sustainable development as a set of normative practices (or ways of doing). Despite all the activity, there 'is growing concern that *we* are not proving as successful as might be wished in protecting *our* planet and sustaining *our* future' (Summerhayes et al. 2002: 1–2; emphasis added). This assessment underscores two further dilemmas: a tendency to value Earth instrumentally – for what it offers people rather than for what it intrinsically *is*; and a propensity to ignore how humans (and non-humans) perceive, use or value things at different scales. Indeed, to forget scale is to overlook crucial dimensions of engagement and empowerment – namely, *being in* and *nourishing* place. Here, the term *being* does not simply signify material presence in a landscape, but a sense of committed attachment which, in the case of the commons, is vital in developing capacities to nourish that which is simultaneously 'ours' and 'not ours.'

Scale and levels of governance

Scale is an elusive concept. It may refer to relative magnitude. In certain parts of the world, for example, scales of local and regional degradation of marine environments are greater than in others. Scale can signify an ordered standard, such as might exist if improvements to coastal management capacities shift from point *x* to point *y* in a range of outcome measures for state-of-the-environment reporting. It can indicate a ratio between an object and a representation of that object, as in the case of a seascape and an oceanographic map of it. Scale is inferred in design, measurement, calculation, regulation or production. It is implied in the relativities between things: that challenge is serious, this one is trivial; that impact was then or will be later, this impact is now; that feature is distant, this one is near.

Scale is as much about flows and network as it is about boundaries, and this point is important for what follows. Where consideration of the intrinsic value of marine environments is concerned, an appreciation of socio-spatial complexity is especially important: marine environments account for the deepest waters over which no sovereign nation has legal, political or economic control but in which many have extensive interests – they are part of the global commons – owned by none, to be nourished by all. They include territorial waters from the 200 nautical mile mark to the outer edge of coastal zones, and function to reinscribe national, regional and local allegiances. They embrace these coastal zones, marked by above-average concentrations of people and economic activity (NetCoast 2001). They neither respect nor respond to the boundaries imposed on them by cartography. What flows from river systems to estuaries, from territorial waters to deep seas to circulate around the globe in water and air, recognises neither juridical nor jurisdictional boundaries, structures and processes.

This lack of recognition raises questions of governance to which social scientists must pay heed in addressing the implementation deficit. Wapner (1995: 45) suggests that global efforts on behalf of the environment demand world order reform that ‘enlarges the political imagination and expands the conceptual boundaries of future thinking and possible action with regard to environmental issues’. In this light, different camps of supra-statists variously argue the need to foster *world government*. However conceived,

world government may simply be the worldwide legitimation and further codification of the state-system. Critics also point to its infeasibility ... There is no reason to believe that a world government would necessarily be more benign than existing state governments [and] ... there is nothing intrinsic to world government that precludes further ecological decay. (Wapner 1995: 57)

Alternatively, advocates of sub-statism argue for collapsing nation-states and decentralising political authority to systems of *local governance* on the grounds that centralisation demands and underwrites the technologies of super-industrialisation and economic globalisation. Attending this transformation of production and consumption are massive disruptions to ecological processes and alternative practices of social and economic exchange. Centralisation also overwhelms the capacity to be engaged and empowered.

Sub-statism is a response to these dilemmas, and among its variants is a common emphasis on willingly *living-in-place* in order to be ecologically sensitive and a claim that coercive global government will not achieve these ends. Wapner (1995) nevertheless concludes that a focus on the parts does not guarantee the stewardship of the whole.

In the final analysis, both supra-statists and sub-statists acknowledge that states have addressed environmental degradation via national legislative frameworks, other command-and-control mechanisms and intergovernmental cooperation with the United Nations, the World Bank, the Global Environment Facility, and so forth. Limits to success suggest that ‘the forces that cause environmental degradation continue unabated and have in fact gained momentum over the past twenty-five years – the period marking the heyday of international environmental efforts’ (Wapner 1995: 47). In short, the implementation deficit continues.

Key debates

At least three debates circulate around the question of whether the implementation deficit is attributable to tensions between the global and the local. The first centres on metaphors to describe sustainable development and uphold its position inside the logic of capitalism. The second differentiates between globalising from above (perpetuating the status quo) and the counter-movement of globalising from below (questioning that same system). The third

concerns the significance of global and local scales for the commons – and marine environments in particular.

Sustaining capitalism?

At its most basic, sustainable development is managing a *triple bottom line* between [I was always taught that between referred to two items, among to three or more and if we were to quibble, let's write 'between and among' to show the multiple relations or interactions] economy, society and environment using two strategies. One relies on laws and regulations (related to shipping, coastal development or deep-sea trawling, for example). The other depends on participatory devices (such as government–community partnerships for coastcare, wetlands preservation or coral reef protection). Hart (1999) unsettles the apparent *even-handedness* of this model because the economic is privileged *in fact*. For her, 'the economy exists entirely within society ... [which] exists entirely within the environment [which] surrounds society [and] because people need food, water and air to survive, society can never be larger than the environment.' Her nested understanding of sustainable development reflects ideas of relational scale (Howitt 2002), which underscores the reliance of the economic on the social, of the social on the environmental. It also invokes ideas of scalar relations (Howitt 2002), inferring that people must remember their place in the environment – in that which surrounds and nourishes them.

Sustainable development may also be understood as a strategy to safeguard the *human ecosystem* (Machlis et al. 1997) in which critical natural, socio-economic and cultural resources interact with general social structures that regulate their use. Social structures encompass social *institutions* (health, justice, commerce, education, government and so on); social *cycles* (physiological, individual, institutional and environmental); and social *order* (identity, norms and hierarchies). The system is an arrangement of 'biophysical and social factors capable of adaptation and sustainability over time [that can] ... be described at several spatial scales' (Machlis et al. 1997: 351). This reference to scale is important because no part of the human ecosystem exists outside spatial frameworks or the flows and boundaries that delimit them.

Sustainable development is also viewed as a strategy to value and accumulate natural, human, social, physical, fiscal and financial, and organisational assets (Pretty & Frank 2000; see also Stratford & Davidson 2002). Where an appreciation exists of the integratedness of the *capital assets* that comprise social-life-in-place, and where there are well-developed capacities for civic participation and political engagement, the preconditions to overcome the implementation deficit seem strong, and the tendency to deplete the stock of assets less likely.

Despite the intellectual usefulness of these metaphors, they perpetuate sustainable development's position 'inside' the logic of capitalism. People thus find it difficult to implement *at any scale along the continuum from local to global* the key principles of sustainability necessary to transform institutions and organisations, and to foster nourishing capacities of being-in-place. Indeed, much of the early radical potential of environmentalism (Schlosberg & Dryzek 2002) remains unfulfilled; sustainable development is 'business as usual' (Davidson 2000). This outcome privileges the logic of economic growth inside the framework of ecological modernisation.

Ecological modernisation

Earlier I referred to the debate about globalisation from above and below. Ecological modernisation assumes that super-industrialisation will produce the means by which to protect the environment as it produces the goods and services to advance quality of life. In practice, this idea of quality of life is highly modernised and westernised; it also upholds the status quo.

The values of ecological modernisation influence global thinking and local action for sustainable development from above. At the supra-national scale, for instance, various environmental conferences and commissions have been established by the United Nations. The institutional history, and critiques of this system are well documented (WCED 1987; United Nations 1992a, 2002; Doyle 1998; UNESCO 2003).

One of the foundational figures of environmental sociology, Buttel (2003: 329) argues that these efforts have produced a 'hopeful pattern of international collaboration and agreement that has subsequently become one of the pillars of modern thought about how a more promising environmental future can be made possible'. He views the logic behind an international approach to environmental reform as compelling. It has multiplying effects at various relational and jurisdictional scales involving many stakeholders. It is alternative to command-and-control mechanisms; a route to policy-making that may be more egalitarian and inclusive.

Buttel (2003) is suspicious of ecological modernisation and the faith that certain adherents have in market, state and private action. Rather, he underscores how networks, alliances and coalitions in various locations and at many scales have championed 'globalisation from below' via environmental justice, social justice and the civil rights movements that blend 'the themes of environmentalism and social and racial justice in a way that can bring forward an impressive level of mobilization around local and regional environmental issues' (Buttel 2003: 313). Although he does not specifically refer to alliances whose focus is marine environments, there are many and most tie into other networks that operate simultaneously at *multiple scales* (Ecological Internet Incorporated 2004).

What's local, what's global?

The idea that different scales work concurrently informs the third debate about the implementation deficit (and governance of marine environments more specifically). Many examples show that coastcare, rivercare, marine, and land-based projects bring together community members and groups, private enterprise and government in the local management of marine environments. Efforts are often supported by grants, subsidies and philanthropic endowments, and the gains that are sought are often ecologically modernising. For example, many projects require a focus on the next grant, the next endowment; on ensuring the flow of capital necessary to maintain the project and – somewhere upscale – to satisfy the interests of large companies, property-owners and shareholders seeking to maximise their investments from afar. Sometimes the result is suboptimal: in Australia, for example, the part-sale of Telstra, the Commonwealth-owned telecommunications carrier, to fund the Natural Heritage Trust for coastcare, landcare and related projects did not provide anticipated returns to investors.

There are many instances, too, of critical and radical actions designed to question and sidestep, unsettle and eventually erode the practices of economic globalisation (Starr & Adams 2003). Among the actions for the aquatic environment are those staged by organisations such as Greenpeace to conserve species and habitats, or by local community groups in underdeveloped regions to protect access to marine resources for subsistence livelihoods (Ecological Internet Incorporated 2004; see also Nichols 1999; Cole 2003).

The degradation of marine environments continues apace, notwithstanding the advent of local actions engaged with the state and capital (and thus inside sustainable development and the logic of capital) and those attempting to stand outside or supplant these institutions with forms of sustainable development beyond capitalism.

Perhaps the ongoing and increasing threat to marine environments indicates that the implementation deficit has less to do with whether local action is 'inside' or 'outside' the system and more to do with the dilemmas of scale per se. Some commentators, such as McLaren (2001), are voluble in their claims about the importance of local engagement and empowerment as an antidote to the effects of economic globalisation. Others suggest that it is important not to over-invest the local with the status of 'miracle scale' in relation to sustainable development. Gibbs and Jonas (2000), for example, are impatient with aspects of the argument that the local is the most appropriate site for environmental policy interventions just because it is circuitously described as the level of action that is central to sustainable development by national and, more particularly, by international conventions. For them, as for me, the rhetorical construction of the local is inherently problematic

because it does not acknowledge the complexities of flow, seeking to ‘fix’ spatial categories where none, in practice, exist.

Assuredly, global thought and actions for marine environments are perhaps more apparent than real and appear to have had little overall effect on species or habitat decline, on the loss of coastal lands to urban development, or on international piracy and trafficking, for example. Indeed, there is a veritable industry to address the global dimensions of managing human impacts on marine environments that is based around international preparatory committees, conferences, conventions and agreements. Some might suggest these organisations add little to poverty alleviation and environmental protection, and much to the profit margins or performance claims of airlines, hotel chains, universities and research and development organisations, governments, and so on. Others would counter that to do nothing is unconscionable.

The United Nations exemplifies how diverse local–global tensions typify the governance of marine environments and partly explain the implementation deficit. Chapter 17 of Agenda 21 is entitled ‘Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources’. Seven program areas are advanced: (a) integrated management and sustainable development of coastal and marine areas, including exclusive economic zones; (b) marine environmental protection; (c) sustainable use and conservation of marine living resources of the high seas; (d) sustainable use and conservation of marine living resources under national jurisdiction; (e) addressing critical uncertainties for the management of marine environments and climate change; (f) strengthening international, including regional, cooperation and coordination; and (g) sustainable development of small islands (United Nations 1992b: para. 17.1).

Each program area demands attention to scale. To return to earlier discussions about how marine environments neither respond to nor respect juridical and judicial boundaries, it is important to add that existing structures and processes of governance cannot yet address the complexities that this environment presents. Taking program area (a) as an example, *integrated* management of coastal and marine environments up to the edge of the borders of territorial boundaries (exclusive economic zones) is unlikely without due regard for both land-based activities and those in the deep seas. Nevertheless, the rhetoric of global governance constitutes the solution touted in program area (a) as spatially contained between the [?] shoreline and the 200 nautical mile mark. Certainly, local activists and global policy-makers are addressing the limitations of this rhetoric (see National Oceanographic and Atmospheric Administration 2004). Nonetheless, the nature of funding is political and sectoral (which does not bode well for the radical integration required to manage human activities in relation to marine environments). Furthermore, many projects

are not supported by recurrent budgets and cannot compete with economic activities that are.

Integration is especially important for marine environments, and the failure to recognise the arbitrariness of the local and global is captured by the observation that:

In dealing with the ocean, we are forced to face nearly all [integrative] problems of war and peace, security and economy ... Arvid Pardo in 1967 also specified this through his basic seminal idea that ‘all aspects of ocean space are inter-related and should be treated as a whole’. The role of the ocean and coasts in the new global service-oriented economy and the globalization process amply demonstrates the need for an adequate ocean governance. The legal, international agreements are in place to achieve this. (Kullenberg 2002: 774)

Kullenberg’s pronouncements were supported at the UN’s World Summit on Sustainable Development (WSSD) in September 2002 in Johannesburg. Paragraphs 30–36 of the *Plan of Implementation* (United Nations 2002) refer to oceans, coasts and islands, and are drawn from a larger section (IV). That section is entitled ‘Protecting and managing the natural resource base of economic and social development’ and it privileges the environment’s instrumental values for humanity rather than its intrinsic worth.

Table 9.1 summarises targets and timetables for marine environments adopted at the WSSD. The language used illustrates how the sustainable development framework continues to promote ecologically modernising understandings of environmentalism per se, remains enmeshed in the logic of capitalism, and is characterised by various scalar ambiguities and slippages related to locale, region, nation, and international domains.

[Insert Table 9.1 around here – for this content see <https://amzn.to/3begW4F>]

‘Show me the money’

In October 2003, the WSSD targets and timetables for marine environments were the centrepiece of the second Global Forum on Oceans, Coasts, and Islands in Paris; the first had been held in 2001 and had ensured that marine environments and coastal and island peoples were not neglected in the WSSD process in Johannesburg.

I was an independent observer at the October forum. In two days of intensive pre-conference meetings and three days of formal proceedings, delegates were to (a) focus on how to implement the WSSD targets and timetables outlined in Table 9.1; (b) report on what they and their sectors had been and would be doing to advance the protection of the oceans, coasts and islands; (c) discuss gaps in partnership initiatives from WSSD and forge

new means to close those; (d) examine the particular needs of small island developing states (SIDS) in the lead-up to another international meeting in Mauritius in August 2004 at which the 1994 Barbados Plan of Action on SIDS will be revisited; (e) identify and discuss new issues challenging sustainable development for marine environments; and (f) pinpoint ways to better involve the private sector in the implementation of the WSSD (Global Forum on Oceans, Coasts and Islands 2003).

This agenda was ambitious and thoroughly enmeshed in networks of influence – with prominent delegates from the Global Environment Facility, the World Bank, and the United Nations and its affiliate organisations under pressure to promise *recurrent* resources to fund local actions that advance global thinking on sustainable development and marine protection. It was perhaps ironic, then, that on the first of the pre-conference days, delegates visited and revisited the WSSD timetable for oceans, coasts and islands, often making minimal reference to how that agenda was to be financed. This apparent lack of attention to the ‘real’ bottom line led one experienced player to utter what became a waggish conference catch-cry: ‘show me the money.’

These words are a timely reminder that sustainable development is inside local, sub-national, national, regional and international monetary systems. It is inside bureaucracies and political systems typified by competing demands, interests and ideological priorities. It is inside political and fiscal calculations about what is politically expedient and practical within existing regimes to implement sustainable development’s principles. Equally, it is clear that experienced personnel from international donor groups are well aware of the financial and capacity constraints on implementing the rhetoric of sustainable development, despite the fact that during ‘its first decade, the GEF allocated \$4.2 billion in grant financing, supplemented by more than \$12 billion in additional financing, for 1,000 projects in 160 developing countries and countries in economic transition’ (Global Environment Facility 2001).

Future directions

I began by pinpointing a controversy about the efficacy of economic globalisation, noting the constitution of sustainability principles and sustainable development practices in response to the challenges of modern life and the need for stewardship. I suggested that, for the commons at least, the aphorism ‘think global, act local’ raises questions about the relationship between scales of governance and a collective failure to implement a thirty-year agenda for environmental reform.

I detailed the significance of marine environments and proposed that it is especially difficult (if not impossible) to contain them within the boundaries that scale sometimes implies. Rather, I argued that marine environments demand attention to flows, and

suggested that this presents conceptual and pragmatic problems for governance, which often focuses on creating and maintaining juridical and judicial boundaries.

Importantly, too, I argued the need to think of scale in terms of a network through which being-in-place evokes capacities to nourish. These capacities are central to advocates of both supra-statist and sub-statist solutions to environmental problems, although it is clear that the former's focus on the global and the latter's concern with the local are too prescriptive to account for the complexities of scale and flow.

I then elaborated on three key debates that characterise scalar challenges to sustainable development of marine environments. The first described three metaphors for sustainable development that perpetuate in it the logic of capitalism. The second outlined differences between the drive to globalise from above (for the purposes of economic *growth*) and the counter-movement to globalise from below (which Buttel argues is for social, environmental and economic *well-being*). The third was concerned with the significance of the global and the local for marine environments, and attention was turned to the United Nations to illustrate various points being made.

Finally, my work has been informed by a commitment to *being in place*, a capacity that I think will foster democratic and civic engagement and empowerment to nourish that which is simultaneously 'ours' and 'not ours.' Sitting among hundreds of delegates to the Second Global Forum in Paris in October 2003, I was struck by a number of sensations: the passion of the international community for the governance of marine environments; the sense of urgency about the task to fulfil the impossibly difficult WSSD timetable of action; deep differences of opinion about the scale or scales at which to effect change; common commitment for oceans, coasts and islands. Nevertheless, the overwhelming tenor resembled what Schnaiberg (1980) called the 'treadmill of production', which may serve to underscore my contention that while sustainable development remains embedded in capitalism and ecological modernisation strategies both the general implementation deficit and the untenable exploitation of marine environments will persist and accelerate.

In closing, perhaps the primary determinant in fostering the capacity to think and act at multiple scales of nourishing engagement is the faculty of being in place. Otherwise, do we risk the following? 'The economic relationship of possession, which underpins so many dimensions of human relationships, reduces the other, and in many circumstances the landscapes [and seascapes] that are the other's nourishing places, to the indifferent, interchangeable facelessness of a market commodity' (Howitt 2002: 300).

Discussion Questions

1. In what ways are ideas of scale used in environmental sociology?
2. Wapner (1995) suggests that supra-statism and sub-statism remain inside 'statist' thinking, although they function as critiques of it. Do you agree? Why or why not?
3. The focus of this chapter has been on oceans as a part of the world's 'commons'. Is this type of analysis applicable to private property and sustainable development as well?
4. How would you define 'global' and 'local'?
5. What do you understand to be the major differences between globalisation from above and below?
6. The principle of integration is central to sustainability. What does the term mean?
7. Is the implementation deficit misnamed? Isn't the 'fuss' merely a debate about incremental – as distinct from radical – change?
8. Is economic globalisation different from globalisation generally? How? What significance might this difference have for thinking about sustainable development?
9. Speculate: would long-term recurrent funding – such as a sustainability tax levy – help overcome the limited successes of the past?
10. Marine environments do not respect or respond to the sorts of boundaries that human beings impose on them. Discuss.

Glossary of Terms

Anthropocentric: human-centred; in environmentalism, assuming the central importance of people's welfare in relation to the welfare of other species or habitats and ecosystem processes.

Anthropogenic: human-induced and/or human-sourced change.

Artisanal: as distinct from commercial; small-scale ventures typically involving low-level, craft-based [typically involving limited technologies and the use of traditional crafts] rather than sophisticated and industrial ones.

Benthic: of the ocean floor; from the Greek 'depth of the sea;' the term describes flora and fauna that are fixed to or that dwell on the sea bottom (Macquarie Dictionary 1985).

Carrageenan: one of the family of hydrocolloids that includes gelatine, pectin, xanthan gum, agar, gellan, locust bean gum and Carboxyl Methyl Cellulose. Carrageenan is derived from a number of tropical and cold-water species of seaweed, and is refined to a white powder for addition to a wide variety of food, cosmetics and pharmaceuticals as an emulsifier, stabiliser and thickener (Bixler 1996).

Globalisation: is seen as the intensification, widening and deepening, of international networks across the economic, military, technological, ecological, migratory, political and cultural flows. That definition ... argues that the intensification of international networks, leading to 'interconnectedness,' is unique to the contemporary period, but stresses that the networks are created as part of an ongoing process' (Cole 2003: 79; original emphasis).

Hegemony: hegemony involves the naturalisation of particular forms of power through intellectual and moral leadership, the production of 'authority' and the use of the 'majority' and 'consensus' to uphold the privilege of those who exercise those forms of power.

Instrumentalist: in relation to philosophy, this term describes the condition of instrumentalism 'which maintains that ... ideas have value according to their function in human experience or progress' (Macquarie Dictionary 1985).

Mariculture: cultivation of foods from marine sources and environments

Nautical mile – equal to 1852 metres, this unit of measurement is used in both marine and aeronautical navigation and was originally defined as one minute of latitude (Macquarie Dictionary 1985).

Subsidiarity: the process of devolving to the most appropriate level of governance a particular responsibility or responsibilities.

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Table 9.1 Major Targets and Timetables Adopted at the World Summit on Sustainable Development on Oceans, Coasts and Islands

Integrated ocean and coastal management

- Encourage the application of the ecosystem approach by 2010 for the sustainable development of the oceans, particularly in the management of fisheries and the conservation of biodiversity.
- Establish an effective, transparent and regular inter-agency coordination mechanism on ocean and coastal issues within the United Nations system.
- Promote integrated coastal and ocean management at the national level and encourage and assist countries in developing ocean policies and mechanisms on integrated coastal management.
- Assist developing countries in coordinating policies and programs at the regional and subregional levels aimed at conservation and sustainable management of fishery resources and implement integrated coastal area management plans, including through the development of infrastructure.

Fisheries

- Implement the FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing by 2004.
- Implement the FAO International Plan of Action for the Management of Fishing Capacity by 2005.
- Maintain or restore depleted fish stocks to levels that can produce their maximum sustainable yield on an urgent basis and where possible no later than 2015.
- Eliminate subsidies that contribute to illegal, unreported and unregulated fishing and to overcapacity.

Conservation of biodiversity

- Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012.

Protection from marine pollution

- Advance implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities in the period 2002–2006 with a view to achieve substantial progress by 2006.

Science and observation

- Establish a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socioeconomic aspects, by 2004.

Small Island Developing States

- Develop community-based initiatives on sustainable tourism in small island developing States by 2004.
- Reduce, prevent, and control waste and pollution and their health-related impacts in small island developing States by 2004 through the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.
- Support the availability of adequate, affordable and environmentally sound energy services for the sustainable development of small island developing States, including through strengthening efforts on energy supply and services by 2004.
- Undertake a comprehensive review of the implementation of the Barbados Programme of Action for the Sustainable Development of Small Island Developing States in 2004.

(Source: Global Forum on Oceans, 2003, 1)