

## **COASTAL MANAGEMENT: THE NEED FOR A DEDICATED CURRICULUM IN HIGHER EDUCATION**

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Population growth, industrial development and urban expansion have caused considerable impacts on the ecosystems of this planet, nowhere is this more noticeable than in the coastal zone. The reasons for this are quite obvious. Over 50% of the world population now lives within 60 km of the coast<sup>1</sup> and this trend is likely to continue. In the industrialised world the situation is even more acute: about 50% of the population there lives within one kilometre of the coast<sup>2</sup>. Britain has a deep and close affinity with the coast, for it involves many parts of our psyche - personal and public, working, recreational, strategic, historical and aesthetic. The UK has the second longest coastline of any European Community country<sup>3</sup>, and the variability of this coastline is enormous with sandy beaches, rocky cliffs, coastal resorts, saltmarshes, sand dunes, industrial estates, nuclear reactors, estuaries and harbours. Such intensity of use is reflected around virtually the entire coastal world.

However, the 20th Century has seen increasing pressure being placed upon the coastline and even as late as the 1960s it was estimated that the loss of British coastline to unsightly development was as high as 6 miles a year<sup>4</sup>. Coasts and estuaries are under intense and increasing pressure from a wide variety of often conflicting demands: seasonal and permanent settlement, tourism, mineral extraction, waste disposal, coastal defence and landscape, habitat and wildlife protection. The challenge we face is to understand and resolve these many demands in a sustainable way.

The problems of planning and managing for the use of the coast are major issues both in Britain and abroad. Integrated coastal zone management, a concept which is receiving considerable attention world-wide, is clearly about the sustainable use of the world's coastal resources. The questions are 'How can the need for sustainable coastal development be recognised and how can it be achieved?' Reminders of these questions are in evidence in much of the literature and the oft quoted clichés in texts. Education undoubtedly provides a way forward to alleviate some of these problems and to seek long term solutions. The leader of the Labour Party in the UK when asked recently what his three top priorities would be, were he to win the general election, replied "Education, education and education"<sup>5</sup>. This priority list could equally well be applied to prospective developments for coastal management.

Education can provide at least two benefits. On the one hand, it will provide a breed of professionals, both scientific and managerial, in this new area of global concern. On the

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<sup>1</sup>United Nations, *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, volume 1*, New York: United Nations, 1993, p239

<sup>2</sup>Viles, H and Spencer, T, *Coastal Problems: Geomorphology, Ecology and Society at the Coast*, London: Edward Arnold, 1995, p1

<sup>3</sup>European Commission, *Yearbook of Annual Statistics*, 1996

<sup>4</sup>Burton, R, *Travel Geography (2nd ed.)*, London: Pitman, 1995, ch27

<sup>5</sup>The Labour Party, *Election Manifesto*, 1997 UK General Elections. Although the emphasis is on primary education, it all the same underscores the crucial importance of education

other hand, it will create awareness in general public. This may range from young children to senior citizens through the medium of teaching, literature, media, public speaking and lobbying. The long term aim should be to create a generation of young, enthusiastic teachers who will become vocal proponents of coastal concerns. In the 1970s this was the case with general environmental awareness. It was a little known areas of public concern but mutli-pronged approach taken by environmental pressure groups, governments (at all levels), inter-governmental and non-governmental agencies, the industrial sector and educationists has meant that despite very humble beginnings, environmental concern has achieved the status of an academic discipline with very strong classical underpinnings. A similar awareness, concern and desire to change existing trends needs to be created in the field of coastal management. There is a need to create a 'coastal culture' in the minds and thought processes of policy makers and educationalists. In the words of Elisabeth Mann Borgese<sup>6</sup>, there is a need to create an "Oceans Mafia" to better manage the affairs of the seas and the coast. Where better to achieve this culture than in institutes of higher education and research organisations ?

The need for a dedicated coastal management curriculum is emphasised in Chapter 17 of AGENDA 21<sup>7</sup>. The outcome on the UNED-UK's 'Round-Table on Oceans and Seas' makes the following observation<sup>8</sup>:

"Education and public awareness are fundamental to better understanding and commitment to marine environmental protection. The UK Government should

- support such activities at every level of education
- encourage general training in integrated coastal zone management (ICZM) and other marine management and protection courses
- address the need for training for practitioners
- support local community and voluntary efforts to raise public awareness in this respect"

With this in mind, University College Scarborough (UCS) devised Britain's first undergraduate programme in Coastal Management and accepted its first cohort of students in 1994. Prior to this, coastal management as an academic discipline in Britain appeared as a small section within a range of undergraduate programmes (for example, geography, marine biology, marine sciences, law and planning) and it featured in some post-graduate courses. Very few institutions were able to offer such courses. Clearly there would be an increasing demand for such courses. UCS is an autonomous college of the University of York, which is a medium sized traditional university in the UK higher education sector. Recent research and education assessment exercises gave top ratings to the University on both counts<sup>9</sup>. This arrangement is quite similar to the liberal arts and science colleges commonly seen as part of larger universities in the US educational system<sup>10</sup>. UCS and the School of Environmental Sciences, are seen as a coastal site campus of the University of

<sup>6</sup> See for example, Borgese, E M, *Ocean Governance and the United Nations*, Halifax, NS: Centre for Foreign Policy Studies, Dalhousie University, 1995 and her other numerous writings on behalf of the International Ocean Institute of which she is the founder Chairman

<sup>7</sup> *Op Cit*, (at footnote 3) pp238-274

<sup>8</sup> UNED-UK, *Roundtable on Oceans and Seas*, London: UNED-UK, 1995 (Pamphlet). The report of this roundtable was submitted at the Commission on Sustainable Development

<sup>9</sup> The Higher Education Funding Council for England (HEFCE) conducts this exercise for all centrally funded universities and publishes league tables in respect mainly of quality of teaching and research

<sup>10</sup> Paul, R W, 'The Role of Liberal Arts and Sciences Colleges in Marine Education', *ECSA 26 and ERF '96 joint Symposium*, 16-20 September 1996, Middleburg, The Netherlands, 1996

York. The college conducts a wide range of undergraduate and postgraduate programmes and within the School of Environmental Sciences there is clearly a focus on coastal issues. This reflects existing academic expertise and the research interests of sciences staff and also the superb geographical location which the college possesses. The campus is a mere 200 metres from the coast.

The School of Environmental Sciences conducts four undergraduate degree programmes, along with a Masters programme jointly taught with the University of York. The degrees on Coastal Marine Biology and Geographical Science are at the extreme ends of the spectrum of the expertise that are covered biology and physical geography. The other two degrees, namely, Coastal Management and Environmental Science utilise a range of inputs from these and other disciplines. The modular nature of the courses permits considerable interaction between the degrees. The coastal management curriculum covers physical and natural sciences, economics, law and policy making. Fieldwork is an important and integral part of the curriculum, as is working alongside professionals in the field of coastal management who involve students in existing projects. The coastal work at University College Scarborough is underpinned by research from CERCIC (Centre for Environmental Research into Coastal Issues), North East Atlantic Liaison Group (funded by the Department of the Environment) and the Marine Forum for Environmental Issues, all of which are based at the university.

The School of Environmental Sciences at UCS has also taken the lead role in setting up the Discipline Network in Higher Education<sup>11</sup> with a sharp focus on coastal sciences and management. This is an activity supported and encouraged by the UK Department for Education and Employment. The main reason why coastal science and management need particular attention and dedicated curricula is the fact that major new concepts such as precautionary approach, stewardship principle and sustainable development are being increasingly adopted by both national and international organisations dealing with environmental issues. Coastal Management is seen as an increasingly important academic discipline of global significance. It emphasises and embraces interdisciplinary study, land and sea-use conflicts, aesthetic valuation, environmental impact assessment, law, policy making, ecology, geomorphology, engineering, human resource development, planning, politics and management. The relative emphasis placed upon each of these disparate areas and the manner in which coherence may be drawn from such a diverse range of disciplines is the key problem facing the educator of coastal managers.

There is a need to debate both the core curriculum and the overall content of undergraduate coastal management programmes. This debate should take place at an international level with experienced partners sharing their expertise with emerging partners in the search for the key values and content of this crucially important and rapidly emerging discipline. The future success integrated of coastal zone management as an important academic discipline depends upon the quality of this debate.

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<sup>11</sup> Ducrottoy, J-P, 'Presentation of the Network in Coastal Sciences and Management: A Regional Vocational Future for Higher Education', *Coastal Sciences and Management: Discipline Network in Higher Education, Conference/Workshop, 27-28 November 1996, University of Bradford, UK*