

Environmental Assessment Lecturers' Handbook

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This EA lecturers' handbook, including a curriculum for EA related Master Programmes, is the outcome of work package C of the EC PENTA Erasmus Mundus project.

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Preface and acknowledgements

This handbook's main aim is to provide support to the environmental assessment (EA) lecturer in the European Union and elsewhere. It consists of three main parts and 18 chapters. The first part reports on the experiences, current practice and prospects of EA related master programmes. In this context, internationalisation and harmonisation efforts in EU higher education are discussed and experiences with an established MA in EIA (Environmental Impact Assessment) are outlined. EA teaching in the context of postgraduate environmental courses is critically reflected upon, and finally, the results of an analysis of existing EA related master degree programmes in the EU are presented. Part 2 provides for a common curriculum for a master in EA, outlining the content of five core modules, consisting of:

1. Environmental assessment;
2. Principles for environmental integration;
3. Environmental management systems;
4. Ecological and environmental economics; and
5. Organisational behaviour and public decision making.

Part 3, finally, provides for key sources for some key EA issues, revolving around (a) issues relating to context and effectiveness; and (b) issues relating to the EA process, including procedural stages, methods, participation and follow-up.

The handbook is one of the outcomes of the EC Erasmus Mundus PENTA (Promotion of European Education for Third Country Audience) project. Other outcomes include:

- a project website (www.penta-eu.net);
- a library brochure on European EA education;
- EA related seminars and workshops for EU and third country university lecturers, including (see www.penta-eu.net):
 - Lecturers' Workshop on EA curriculum for third country audience in Bratislava, Slovak Republic, 20 February 2007;
 - Workshop on EA education for European Third Country Audience in Graz, Austria, 23-24 April 2007;
 - Workshop on EA education for non-European Third Country Audience in Dehradun, India, 24-26 September 2007;
- an SEA Textbook (Author: Thomas Fischer; published by Earthscan in 2007).

This handbook would have not been possible without the input of the 15 internationally recognised EA experts, representing a total of 12 countries, most of which attended at least one of the PENTA seminars and workshops introduced above. In this context, a particular big thank you is due to the following international authors: Jos Arts, Adam Barker, Aleh Cherp, Alfred Herberg, Carys Jones, John Phylip-Jones, Paula Posas, Asha Rajvanshi, Francois Retief and Chiara Rosnati.

The handbook editors from Liverpool, Bratislava and Graz, November 2007.

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Ralf Aschemann is an internationally recognised expert on SEA. Since 1995, he has conducted numerous related projects, like the first Austrian pilot SEA. He is also lecturing on EA at Graz University. Examples of his publishing activities are the co-authorship of the study “SEA and Integration of the Environment into Strategic Decision-Making” (conducted by an international consortium led by William Sheate of Imperial College London, and commissioned by the European Commission), and his co-editorship of the Handbook on SEA (Earthscan, London). Besides the PENTA project, Ralf is currently engaged in two other EC funded projects; one dealing with the transposition of the EU SEA Directive in Croatia and the other one with strengthening the institutional capacity for implementing and enforcing the EU SEA and Reporting Directives in Romania.

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Paola Gazzola (PhD, Liverpool; MA Venice) is a Research Associate at the University of Liverpool. She has been working on SEA, EIA, urban ecology, and the assessment of evaluation practices within planning processes in differing contexts for many years. In this context, she worked with a Canadian environmental NGO; the School of Urban Design, University of Washington; IAIA and World Bank. From 2002 to 2006, Paola conducted her PhD research on how contextual elements and different attitudes towards the environment can affect the development of effective SEA. Paola is a Board Director of IAIA.

Alfred Herberg has been Deputy Head of the Department of Urban Development and Urban Ecology at the Institute of Ecological and Regional Development (IOER) in Dresden since June 2007. He also lectures at the University of Technology in Dresden. An important part of his recent research work has focussed on environmental planning and EA in urban and suburban areas. From 2003 to 2007, he worked as Assistant Professor at the University of Technology Berlin in the Department of EIA. Previously, he worked as scientific officer at the Saxon Environmental Protection and Geology Agency (LfUG), where he was responsible for ecological landscape planning. He completed his doctoral thesis in 2002 at the University of Technology in Berlin. He is author of numerous articles on SEA and author and co-editor of books and articles on ecological landscape planning and nature conservation.

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Urmila Jha-Thakur is a Research Associate at the University of Liverpool. She graduated in Geography in 2000 from University of North Bengal, India, with First Class Honours and with a University second rank (silver medal). During her study, she opted for Economics and Political Science as her additional subjects. Her interest in environmental management started during her undergraduate degree when she conducted a grass-root level survey of a rehabilitated village located within a coal mining area in India. To pursue her interest further in the field of environmental management, Urmila studied MBA (Environmental Management) in University of Liverpool. Supported by an Overseas Research Scholarship (ORS) and University of Liverpool International scholarship, she continued with her PhD in the field of EIA and thereafter took up a research post in the same department.

1 Introduction and summary

By Thomas B Fischer

This chapter introduces the EA handbook, summarising the main points made. It is divided into four sections. First, the purpose of the handbook is explained and an outline of the three parts and 18 chapters is given. Second, the chapters of part 1 'EA related master programmes: experiences, current practice and prospects' are introduced. – This is followed by a summary of part 2, the 'curriculum for EA related master programmes'. Finally, the chapters presented under the third part of the handbook 'Key sources for some key EA issues' are introduced.

1.1 PURPOSE AND OUTLINE OF HANDBOOK

The main purpose of this handbook is to support university lecturers in setting up and teaching environmental assessment (EA) related master programmes. Whilst in this context, a European perspective is most prevalent, the materials provided can also be used in a wider international context.

The handbook is sub-divided into three main parts. Part 1 reflects on the experiences, current practices and prospects of EA related master programmes. In this context, four chapters are presented on (1) the internationalisation of master degree programmes (reflecting on the European Bologna process), (2) the development of an established EA master course over time, (3) how to deal with EA in the context of environmental postgraduate courses and (4) an analysis of existing EA related master degree programmes in the EU.

Part 2 of the handbook introduces five core modules of a curriculum for EA related master programmes. In this context, core module [one-1](#) deals with environmental assessment in general, focusing on SEA and EIA. Core module 2 introduces principles of environmental integration. Core module 3 revolves around environmental management systems and core module 4 around ecological and environmental economics. Core module 5, finally, reflects on organisational behaviour and public decision making processes.

Part 3 of the handbook presents eight chapters on key EA issues, relating to (a) the context and effectiveness of EA and (b) the EA process. Here, the importance of the specific cultural and social context is stressed when designing effective EA systems. Furthermore, what EA effectiveness actually means is explained. EA scoping experiences are reflected on. How the effective application of EA may be supported by providing relevant baseline data is discussed. The rationale and methods of public participation in EA are explained and EA methods are introduced. Finally, the importance of EA follow-up is explained.

Subsequent sections of this chapter will briefly introduce chapters 2 to 18, making reference to the three main parts of the handbook.

1.2 EA RELATED MASTER PROGRAMMES: EXPERIENCES, CURRENT PRACTICE AND PROSPECTS

In chapter 2, Urmila Jha-Thakur reports on the internationalisation of master degree programmes. In Europe, this process is supported by the so-called Bologna process, which was started in 1999 in the Italian city of Bologna ('Bologna Declaration'). Its chief aim is to promote European education worldwide by establishing a European Higher Education Area (EHEA) by 2010. The Bologna process is the result of a series of policy initiatives, which have evolved in Europe since the 1970s. It has complemented further policy initiatives like the EU's Lisbon Strategy, aiming to deliver lasting economic growth and creating better jobs in the EU. The rationale behind internationalisation of higher education is to help students to prepare for performing in an international and multicultural context. A main challenge is to encourage mobility of professionals by making qualifications acceptable across Europe. Degrees from different countries should thus be roughly comparable in terms of learning outcomes and work load.

In chapter 3, Adam Barker and Carys Jones reassess the direction of postgraduate environmental assessment education, based on the University of Manchester experiences from 1996 until today. In this context, they reflect on the changing institutional agenda, from architectural design in the 1990s to sustainability today. Furthermore, they report on the origins, rationale and contents of the Manchester MA in Environmental Impact Assessment and Management. The graduates degree backgrounds and destinations are described and recruitment statistics are presented. Finally, future directions of the MA in Environmental Impact Assessment and Management are discussed.

In chapter 4, Aleh Cherp portrays challenges for environmental postgraduate education, focusing on the role of EA. In this context, he particularly reflects on the experiences made with the Erasmus Mundus Masters course in environmental sciences, policy and management. Challenges and relevant responses revolve around the scope of environmental assessment in general, issues surrounding interdisciplinarity and cultural diversity. Necessary mindsets of environmental professionals are identified. These include (a) earthy, (b) analytical, (c) careful, (d) collaborative and (e) action oriented mindsets. Functions and key elements of assessment are finally discussed, considering these five mindsets.

In chapter 5, Paola Gazzola presents the results of a comparative analysis of existing EA-related master degree programmes in the EU. In this context, practice in nine EU countries was considered, including the UK, the Netherlands, Germany, Sweden, Finland, the Republic of Ireland, France, Italy and Spain. As an outcome of the analysis, core modules taught in EA related master programmes are identified. These are the basis for the modules presented in part 2 of the

handbook. In this context, it is of particular importance that whilst in certain countries EA is academically and professionally linked to more science-based backgrounds (e.g. Italy, Spain and France), in others countries, modules tend to be more broadly defined and social science led (e.g. the Republic of Ireland and the UK).

1.3 DESIGNING A COMMON CURRICULUM FOR EA RELATED MASTER PROGRAMMES

Chapter 6 by Paola Gazzola and Thomas Fischer introduces core module 1 of the common curriculum for a Master in EA. It aims at developing a basic understanding of EA. An overview of the existing legal, administrative and policy frameworks for EA is provided. Furthermore, an overview of the procedural and methodological aspects to EIA and SEA in EU and non-EU countries is given. How EA works in practice is discussed and finally, a range of references, guidelines and manuals that are sought to be capable of assisting future professionals in conducting EAs are provided.

Chapter 7 by Paola Gazzola presents principles for environmental integration. In this context, what ‘the environment’ means is explained, revolving around the physical and biological environments. Why environmental integration should be promoted is explained. In this context, the development of environmental movements is described, revolving around precursors of environmentalism in both, Europe and North America. Furthermore, the roles of international conferences and the more recent sustainable development movement are reflected on. Existing and emerging environmental threats are described, focusing on land resources, wildlife and plants, water, drought, famine and desertification, air and rain, as well as ozone depletion and global warming. Finally, whether the concept of sustainable development presents a possible solution for better environmental integration is discussed.

Chapter 8 by Urmila Jha-Thakur focuses on environmental management systems (EMSs). A holistic approach in covering EMSs is followed. In this context, theory, standards, procedural and practical aspects of EMSs are covered. The historical development of EMSs is outlined, looking at safety and environmental auditing, total quality environmental management and eco-management auditing. This is followed by a description of organizational drivers and barriers to EMSs. Different standards are introduced, including EMAS standards (EMAS, ISO and BS) and other complementary standards (environmental standards/eco-labeling, environmental performance evaluation, life cycle assessment - LCA). How EMSs are implemented and adapted in practice is described. Finally, some case studies and a practical exercise are presented.

Chapter 9 by Urmila Jha-Thakur is on environmental and ecological economics. In a world dominated by economic thought, this is of key importance for environmental assessment. In this context, three main groups of environmental economics are distinguished; (1) economic emphasis (market economy and limits to growth), (2) ecological emphasis (ecological perspective of resources and natural capital), and (3) an integrated approach (sustainable development and environmental degradation in the developing world).

Chapter 10 by Paula Posas and Thomas Fischer, finally, presents the fifth core module on organisational behaviour and public decision making in the EA context. Firstly, a definition and key relevant theories of organisational behaviour are presented. In this context, the value of work in the field of organisational behaviour for effective EA application is particularly stressed. Secondly, decision making theories are introduced, focusing on the rational model, the bounded rational model, the garbage can model and the political or coalition approach to decision making. How decision making can be influenced is explored and some useful decision making aids and techniques are identified. Thirdly, public participation is elaborated on. In this context, the notion of ‘public interest’ is discussed. Participation techniques are introduced and an overall evaluation of public participation in decision making is carried out.

1.4 KEYSOURCES FOR SOME KEY EA ISSUES

The third part of the handbook on key sources for some key EA issues includes two chapters on EA context and effectiveness, as well as six chapters on the EA process; procedural stages, methods, participation and follow-up.

In chapter 11, Chiara Rosnati elaborates on the importance of considering the specific cultural and social context when designing environmental assessment systems. In this context, she stresses the fact that ‘cultural heritage is a strategic resource, favouring not only social and economic development, but also enhancing the quality of life of a country.’ Citizen Value Assessment (CVA) is advocated as a way to establish how people judge their living environment. Furthermore, the use of social impact assessment (SIA) in EA is encouraged.

In chapter 12, Francois Retief discusses the notion of EA effectiveness. This is of particular importance in the face of ‘increased pressure from decision makers and politicians to argue and prove its added value’. The effectiveness debate is conceptualised and terminology required to engage with the effectiveness theme is introduced. Different evaluation frameworks are briefly described and effectiveness criteria are introduced. Empirical evidence showing how effective EA has been to date is introduced and finally, factors contributing towards more effective EA practice are highlighted.

In chapter 13, Thomas Fischer and John Phylip-Jones reflect on EA scoping experiences. Scoping is the EA stage at which issues, impacts and preliminary alternatives are determined that should be addressed at subsequent stages. The general purpose of scoping is explained and key objectives, guiding principles, elements, multi-dimensional aspects and overall requirements for effective EA scoping are introduced. Ways of undertaking scoping and the role of consultation and public involvement are depicted. Finally, criteria of good practice, methods and techniques are introduced.

In chapter 14, Alfred Herberg establishes how the effective application of SEA can be supported by providing relevant baseline data. In this context, first the importance of clear environmental objectives is highlighted. How relevant baseline data may be established is described next. Availability of data in practice is discussed. In this context, the Environmental Atlas of the City of Berlin is introduced, representing digital environmental data at the upper scale range in an area wide manner.

In chapter 15, Ralf Aschemann explains the rationale and methods of participation in EA. In this context, what effective public participation means and requires is explained. The different levels of participation are introduced and discussed, from simple reporting, communication and consultation to full participation. Actors in and timing of public participation are explained. Furthermore, various methods and techniques of public participation are depicted. Finally, three case studies of good public participation practice are introduced.

In chapter 16, Ingrid Belcakova introduces contents and methods of assessment and report preparation. First, overall requirements for report preparation are elaborated on. In this context, the tasks involved are identified. This is followed by a brief introduction into the methods and techniques available for assessment. Finally, the assessment of cumulative effects is particularly highlighted.

In chapter 17, Asha Rajvanshi elaborates on EA impact mitigation and compensation, aiming at the development of measures for avoiding, reducing, remedying or compensating possible adverse effects, as well as enhancing beneficial effects. Elements of mitigation and compensation are defined. In this context, the importance of the mitigation measures hierarchy is stressed (avoid, minimize, rectify, compensate and enhance). The need to consider different alternatives, sensitive design, environmentally sustainable technology options, development restrictions, and sensitive timing is underlined. In this context, it is stressed that restoration and compensation should only be pursued in case impacts can neither be avoided nor sufficiently reduced.

Finally, in chapter 18, Jos Arts elaborates on the importance of EA follow-up. In this context, he firstly explains what EA follow-up is (key components and forms). Reasons are then provided for why follow-up is relevant. The main stakeholders involved in EIA follow-up and regulations are introduced. This is followed by a description of how to do follow-up. Whilst there are similarities of EIA and SEA follow-up, how the latter may differ from the former is explained. Lessons learned from past follow-up experiences are summarised, focusing on barriers and success factors. Finally, possible future challenges are outlined.

Part 1:

**EA related master programmes:
Experiences, current practice and prospects**

2 Internationalisation of master degree programmes - reflecting on the European Bologna process

By Urmila Jha-Thakur

Chapter two is divided into eight sections. The first section introduces the Bologna declaration of 1999 and explains its relevance to EA education in Europe. A summary of the Bologna process is presented next. The background of the Bologna process is explained and the importance of internationalisation of master degree programmes is discussed. The fifth section describes the implementation of the process and highlights the tools that can help achieving it. Problems associated with the Bologna process are identified next, before implications on developing EA master degree programmes are determined. Finally, conclusions are drawn.

2.1 INTRODUCTION TO THE BOLOGNA DECLARATION AND ITS RELEVANCE TO EA EDUCATION IN EUROPE

Twenty-nine European Ministers of Education signed the Bologna declaration in 1999 in the Italian city of Bologna. Its chief aim is to promote European Education worldwide by establishing a European Higher Education Area (EHEA) by 2010. The Bologna Declaration is a statement of intent and not legally binding for the signatory countries. It has played a crucial role in the ‘recognition and integration of the international dimension in national higher education policy’ (Buchberger and Buchberger, 2003). The objectives of Bologna can be broadly classified into four categories, as follows:

- to enhance student mobility across Europe;
- to build a common education structure within Europe (it is here that this handbook is of particular relevance);
- to develop a two-tiered education system within Europe; and
- to make European education attractive for a world audience.

Every other year, the ministers from the signatory countries meet up to discuss progress made and accordingly set up additional targets. After the initial meeting in 1999, the ministers met four times in Prague (2001), Berlin (2003), Bergen (2005) and in London (2007). These ministerial summits are supported by two groups, which are the Bologna Follow-up group and the Bologna Board (The Europe Unit, 2007). The experiences, guidelines and lessons learned from the Bologna process have been followed closely in developing the curriculum for EA related master programmes in part 2 of the handbook.

2.2 SUMMARY OF BOLOGNA

Since the signing of the declaration in 1999, the Bologna process has been gradually broadening its scope in terms of the number of participating countries, as well as the themes and issues covered by it (see Table 2.1). Currently, the number of signatory countries has increased to 45 and there are ten action lines set out in the Bologna process. The following paragraphs describe the gradual development of the Bologna Process since 1999.

2.2.1 Bologna meeting (1999)

The Bologna Declaration was signed at the Bologna meeting in 1999 by twenty-nine countries and includes six action lines. The first action line is about adoption of a system of easily readable and comparable degrees. The second action line is a continuation of the first, as it sets out to establish a comparable system based on the introduction of two cycles; bachelors and masters. To further enhance this, the third action line proposes to establish a uniform credit system. The aim of the first three action lines is to make higher education more comparable. By achieving this, the system is expected to promote mobility and this is what the fourth action line sets out to achieve. The issue of quality assurance is introduced in the fifth action line. It was intended that a sound quality assurance system would help in ‘developing comparable criteria and methodologies’. Finally, the sixth action line outlines the ‘promotion of the necessary European dimension in higher education’; including ‘inter-institutional cooperation’ and ‘integrated programmes of study, training and research’ (UK HE Europe Unit, 2005; Bologna Declaration, 1999).

2.2.2 Prague Summit (2001)

During the Prague summit in 2001, the signatory countries increased from twenty-nine to thirty-three. Furthermore, three additional action lines were set out. The seventh action line set out in Prague focussed on having a ‘lifelong learning perspective’. Higher education institutions and students are involved in the process through the eighth action line. This plays a crucial role in establishing a ‘social dimension’ to the Bologna process and emphasises ‘public good and public responsibility’ (Wachter, 2004). The ninth action line adds to the international dimension to the EHEA process by setting out to promote the ‘attractiveness of EHEA’.

Table 2.1: Summary of the Bologna process since 1999

Summit	Action lines set out	Notes
1999-Bologna Summit	1. Adoption of a system of easily readable and comparable degrees 2. Adoption of a system essentially based on two cycles 3. Establishment of a system of credits 4. Promotion of mobility 5. Promotion of European co-operation in quality assurance 6. Promotion of the European dimension in higher education	29 signatory countries
2001-Prague Summit	7. Focus on lifelong learning 8. Inclusion of higher education institutions and students 9. Promotion of the attractiveness of the European Higher Education Area	33 signatory countries
2003-Berlin Summit	10. Doctoral studies and the synergy between the European Higher Education Area and the European Research Area	40 signatory countries
2005-Bergen Summit	No new action lines	45 signatory countries; implementation and consolidation of existing reform processes
2007-London Summit	No new action lines	looked beyond 2010 and emphasized on follow-up of Bologna

The Prague summit therefore, saw the Bologna process extending beyond Europe and considered ‘transnational education’ for the first time (Wachter, 2004).

2.2.3 Berlin Summit (2003)

At the Berlin Summit in 2003, the number of signatory countries grew to 40. The ministers felt the need to focus beyond the two types of degrees and as a result for the first time introduced a third cycle, i.e. the doctoral level. The tenth action line also attempted to build links between the EHEA and the various research areas.

2.2.4 Bergen Summit (2005)

Five more countries joined the Bologna process in Bergen in 2005, extending the number of signatory countries to 45. No new action lines were proposed, as the ministers agreed that the period from 2005-07 should be utilised in ‘implementation and consolidation of existing reform processes’. Two reports on two important issues of the emerging EHEA were adopted during the summit. These include the European Standards and Guidelines for Quality Assurance in the EHEA, encompassing plans for a register for quality assurance agencies and the framework for qualifications of the EHEA (UK HE Europe Unit, 2005).

2.2.5 London Summit (2007)

The London summit was held in 2007 with three years left in achieving the target of EHEA by 2010. This summit mainly emphasized on setting priorities for the remaining years of the process. The summit also looked beyond 2010, considering provisions for a follow-up of the Bologna process.

2.3 THE BOLOGNA PROCESS- THE INITIAL IDEA AND RATIONALE

The Bologna process is not a sudden stand-alone reform for creating a common education area in Europe. Rather, it is the result of a series of policy initiatives, which have evolved in Europe since the 1970s. The 1970s saw some early signs of a common policy framework in European education. An information network was set up in 1976 by the then EC Member States to develop a better understanding of national policies and system structures. This was followed by the launch of the ‘Action Programme in the Field of Education’ in the same year (De Wit and Verhoeven, 2001). The educational cooperation gained momentum in the 1980s when supranational programmes, such as Erasmus, Delta and Lingua were introduced. In 1992, the Maastricht Treaty emphasised the role of the European Commission in encouraging ‘cooperation between Member States’ in the field of education (Huisman and Van der Wende, 2004). This was followed by the Treaty of Amsterdam signed in 1997. The purpose of the Treaty was ‘to create the political and institutional conditions to enable the European Union to meet the challenges of the future’ and in order to do so it encouraged cooperation between member states to develop the education quality within Europe (European Commission, 1999).

The predecessor of the Bologna process was the Sorbonne Declaration adopted in Paris in 1998 by the ‘EU big four’, consisting of education ministers of France, Germany, Italy and the UK (Furlong, 2005; Westerheijden and Van der Wende, 2001). The intention was to ‘harmonise’ higher education in these four countries, which was well accepted by the broader

audience and later extended to the Bologna Declaration by involving other signatory countries. The Bologna process has also complemented further policy initiatives like the EU's Lisbon Strategy, aiming to deliver lasting growth and creating better jobs in the EU. 'Higher education is seen as crucial to the success of the Lisbon Strategy' (UK HE Europe Unit, 2005). Soon after this, the Bruges-Copenhagen process was launched in 2001 to encourage similar cooperation in vocational education and training.

2.4 INTERNATIONALISATION OF MASTER DEGREE PROGRAMMES

Unlike its predecessor, Bologna is not restricted only to setting standards or harmonising education within Europe. The terms standardisation, harmonisation and internationalisation have often been used synonymously within the Bologna context. Although there are certain overlaps, they differ in scope. Standardisation usually implies making things similar by adopting similar basic features or standards. Harmonisation, on the other hand, is to make things suitable and agreeable (Cambridge Dictionary, 2007). Within the context of higher education policies in Europe, setting common standards through implementing a European Credit Transfer System (ECTS), exemplifies standardisation, while adapting policies like the introduction of the two-cycle degree structures is a harmonisation effort.

EU's involvement in standardisation and harmonisation of education is not new. The ECTS, which is now used in the Bologna process, was introduced during the Erasmus Programme in the 1980's and efforts of harmonisation were already made through the Sorbonne Declaration. While Bologna includes both aspects, it attempts to move further. The emphasis is not only on creating a common higher education in Europe, but to promote it internationally.

The Bologna process is conducted outside the formal decision-making framework of the EU; the agreement is intergovernmental in nature and may involve governments who are not EU members. Therefore, Bologna has gone a step further from 'standardisation' and 'harmonisation' to 'internationalisation'. Internationalisation within this context implies the integration of international and intercultural dimensions into teaching and research. To internationalise a degree curriculum, it has to be international in content and should help students to prepare for performing internationally and socially in an international and multicultural context. To some extent, the rationale for internationalisation stems from economical reasons. Due to globalisation, there is an increasing demand for international competence of graduate students. International cooperation is also imperative to achieve a higher level of specialisation and investment in advanced research (Van der Wende, 2001). The curriculum of an internationalised degree should be able to attract an international audience, but at the same time it should also cater to the needs of domestic students. Thus, enhancing the knowledge economy leads to an overall competitiveness of the European economy (Furlong, 2005).

The introduction of Two-Tiered Study Structures (TTSS), consisting of the Bachelors and Masters level, is perhaps the most dominant feature of the Bologna process and at times has been perceived to mean the one and the same thing (Tauch, 2004). However, the TTSS is just the tip of the iceberg, as the process involves the introduction of a range of mechanisms to develop comparable and compatible education systems.

2.5 IMPLEMENTING BOLOGNA

In order to achieve the objectives and accomplish the action lines set out in the Bologna process, the main challenge is to encourage mobility of professionals by making qualifications acceptable across Europe. Recognition of qualifications is hoped to ensure job prospects and flexibility across member states and other countries' borders. To enable such a flexible system, a number of mechanisms have been introduced, including TTSS, ECTS, Diploma Supplement, Europass and the Tuning Project. These mechanisms are not mutually exclusive and can be overlapping both, in objectives as well as in structure. The idea is to convert qualifications into a common denominator just like a common currency and enable individuals to earn and spent according to their wishes (The Europe Unit, 2007). The following paragraphs elaborate on what these mechanisms are and how they can be used.

2.5.1 TTSS

As mentioned earlier, the TTSS (Two-Tiered Study Structures) imply the introduction of the two cycles, i.e. the Bachelors and Masters Level. A third level, the PhD has now also been added. The purpose of the two-cycle structure is to harmonise the higher education structure within Europe. This was essential, as some European countries like Germany, Austria and Italy traditionally had a one tier system which lasted for five or six years (Pechar and Pellert, 2004; Wachter, 2004), while others like the UK and the Netherlands already had two-tier structures. Such heterogeneity of structural features within Europe acted as a deterrent for 'global attractiveness and competitiveness' (Wachter, 2004). However, some countries had initiated such reforms prior to Bologna, but the declaration can be viewed as a 'formalized expression of general political will and trend in Europe' (Neave, 2002). Although the TTSS appear to succeed in harmonising the structure at the surface, its introduction led to the emergence of more fundamental issues, which are discussed in the following section (Buchberger and Buchberger, 2003).

2.5.2 ECTS

The European Credit Transfer System (ECTS) was introduced as a credit transfer system long before the Bologna Declaration in 1999 and is the only credit transfer system to be used successfully across Europe (The Europe Unit, 2007). Introduction of TTSS was the first step for introducing transparency and comparability for a higher education system in Europe. However, its introduction also raised further questions, such as:

- what defines degree requirements? and
- how can workloads be calculated and what should be the learning outcomes?

The ECTS aids the TTSS process by assigning credits to the degree structures to make them more comparable.

In February 2001, a conference was held in Helsinki, which laid down recommendations regarding how many credits different degrees should be carrying. ECTS is based on the measure of workload of a full time student per year, which should amount to 60 credits. Hours devoted per year by students are around 1500-1800, which implies that one ECTS credit stands for around 25-30 working hours per week. The Helsinki conference recommended that the first cycle i.e. undergraduate level should carry between 180 to 240 ECTS credits. This would equate to 3 to 4 years of full time study. Longer undergraduate degrees are still being offered, but anything below 180 credits is usually considered to be sub-degree level (Tauch, 2004). The recommendation for the requirement of master degrees was 90-120 ECTS with the minimum being 60 ECTS. The most common pattern which has emerged is 180 credits for bachelor and 120 credits master degrees, which imply 3 years bachelors and two years masters (Tauch, 2004). Other combinations also exist and the master degree is usually adjusted depending on the length of the undergraduate level.

2.5.3 Diploma Supplement (DS)

During the Berlin Summit in 2003, the Diploma Supplement was introduced. Students graduating from 2005 onwards would receive a DS automatically and free of charge. DS helps in making degrees more comparable and enhances academic as well as job seekers mobility. It helps in translating degrees across international borders by describing their nature, content, level and context in a standard format (The Europe Unit, 2007). The DS is not a substitute of qualification, rather it is submitted alongside the original document providing an explanation to it. The DS consists of eight sections which are required to be completed. These are: i) information identifying the holder of the qualification; ii) information identifying the qualification; iii) information on the level of qualification; iv) information on the contents and results gained; v) information on the function of qualification; vi) additional information; vii) certification of the supplement; viii) information on the national higher education system (European Commission et al, undated).

Countries like Belgium and the Czech Republic had introduced DS before the Bologna Declaration while in countries like Austria, Germany, Greece, Latvia, Sweden, Switzerland and Spain, DS was introduced through 'Bologna-inspired legislative reforms' (Tauch, 2004).

2.5.4 Europass

The so-called Europass acts as an umbrella structure encompassing existing instruments, promoting lifelong learning, enhancing transparency and mobility. Instruments include:

- personal and vocational skills (European CV);
- language skills (European language portfolio);
- experience of transnational mobility (Mobilpass);
- vocational qualifications (Certificate Supplement); and
- higher education diplomas (Diploma Supplement).

Additional instruments may be added to the Europass as it is still developing. Europass is available on the Internet where it can be updated, making it more user friendly and easily accessible (<http://europass.cedefop.europa.eu/>). 'Coordination, rationalisation and computerisation are the key concepts based on which the Europass has been developed (Europa, 2004). The advantage of the instrument is that it allows itself to be adapted, based on the needs of individuals and the countries they come from.

2.5.5 Tuning project

More than 130 universities in Europe work co-operatively in the Tuning project to achieve the targets set through Bologna. The project concentrates on nine academic fields, including business, chemistry, educational sciences, geology, history, maths, physics, nursing, and European studies (Buchberger and Buchberger, 2003). The project primarily focuses on issues like comparability and transparency, the ECTS and the TTSS.

The Tuning project works by helping to recognise qualifications by identifying similarities across the educational systems in Europe. The similarities are used as reference points relating to general competences, such as communication or leadership skills, and the subject-specific competences students will have acquired from their particular course of study (The Europe Unit, 2007).

2.6 PROBLEMS OF BOLOGNA

The effort of the Bologna process to standardise, harmonise and internationalise European education, is far from being a straightforward process. There is no doubt that Bologna has been more successful compared with any of its predecessors. However, it is important to realise the complexity of the process as oversimplification may cause a set back to Bologna from achieving its objectives. Some of the problems faced in the Bologna process are discussed in the following paragraphs.

2.6.1 Internationalisation versus national interest

The cultural rationale for internationalisation of European education implies the use of a major language, which in most cases is English. This has initiated debates in countries with other languages. In the case of Greece, for example, culture

and language is promoted as a part of the internationalisation policy (Huisman and Van der Wende, 2004). Use of English as a language to harmonise and attract international students is not only threatening to dilute the importance and use of the respective national or local languages, but it is also influencing the equilibrium of outgoing and incoming students. This may put national higher education at stake. Some countries are experiencing the phenomenon of ‘brain-drain’, whereas in the UK, language problems have restricted the number of outgoing students (Huisman and Van der Wende, 2004).

2.6.2 *Requirements of radical reforms*

Translating Bologna requirements to national policy is highly demanding. In this context, simply restructuring or re-labelling study programmes does not normally provide a solution for transparency or compatibility (Westerheijden and Van der Wende, 2001). The challenge is particularly serious for countries that have had a traditional one-tier system (Pechar and Pellert, 2004). In these countries, the features are to a great extent incompatible with the Bologna requirements. In some cases, existing long degrees have been split and renamed to comply with Bologna requirements. However, ‘the implementation of a two-tier system is impossible without fundamental changes in access regulations’, therefore demanding radical reforms within the national higher education system, not only in terms of structures but also in terms of ‘curricula and approaches to teaching, learning and assessment, (Pechar and Pellert, 2004; Roberts, 2007). In this context, the traditional and most important final university degree of France, called the ‘maitrise’ at 240 ECTS credits, for example, has to be replaced by a master degree at 300 credits (Tauch, 2004). It has also been argued that the Bologna process neglects key issues like ‘declining unit of resource, increasing pressure on academic research and increasing centralisation of national processes, infringing on academic autonomy’. These make the process of reforms even more demanding at the national level (Furlong, 2005).

2.6.3 *Convertibility mechanisms*

The objective of Bologna is to enhance comparability and compatibility of education systems and to create a common education area in Europe. But Bologna has to concentrate more on creating strategies of convertibility between systems rather than creating one single structure (Wachter, 2004). The TTSS was introduced to harmonise higher education. To implement this, ECTS was incorporated within Bologna. In order to make ECTS comparable, a range of definitions had to be provided like learning outcomes, student workloads, modules and level descriptors (see Box 2.1). This list is not exhaustive and makes even the ministers doubt the potential of Bologna in delivering a high degree of compatibility in the future (Wachter, 2004).

2.6.4 *Differences in interpretations*

As mentioned above, each new instrument introduced for setting comparable standards leads to introduction of additional descriptors that need further clarification. This increases the scope of variations in implementation amongst various countries, where the requirements are interpreted differently. Within the context of Bologna, ‘implementation’ in Germany is interpreted as ‘possibility’ and thus the government there is not obliged to follow Bologna (Wachter, 2004). The institutions and departments can introduce the new system, maintain their old system or even run both in parallel (Tauch, 2004). In Italy, the traditional one-tier courses are relabelled as integrated masters to comply with Bologna requirements. On the other hand, some countries have introduced a two semester master programme to their existing first cycle, which is already 4 to 5 years long. This leads to discrepancies within the so-called comparable two-cycle structures (Wachter, 2004).

Box 2.1: Definitions of terminologies used within the Bologna process

Learning outcomes: Learning outcomes are sets of competences expressing what the student will be expected to understand on completion of their studies (The Europe Unit, 2007).

Work load: Workload refers to the average time a learner might be expected to reach the required learning outcomes (The Europe Unit, 2007).

Calculating work load: The workload of a full-time student during one academic year is calculated to be 60 ECTS credits (The Europe Unit, 2007).

Level: Level is an indicator of relative demand; complexity; depth of study and learner autonomy (Gosling and Moon, 2001).

Level descriptors: They are generic statements describing the characteristics and context of learning expected at each level against which learning outcomes and assessment criteria can be reviewed in order to develop modules and assign credit at the appropriate level (Gosling and Moon, 2001).

Modules: Modules may be conceived as coherent units of study amounting between 6 and 15 ECTS credits (equalling approximately 150-375 hours of student work load). A particular module consists of explicit descriptions of:

- a) generic and/or subject-specific competencies;
- b) contents; and
- c) learning outcomes (that have to be demonstrated by students) (Buchberger and Buchberger, 2003).

In current UK practice, the undergraduate and postgraduate levels constitute of 60 and 90 ECTS credits for one-year full time courses, respectively. However, the ECTS guidelines for the transnational joint masters proposes 75 credits and not 90 credits for one-year full-time postgraduate study. The national learning hours further complicate the situation. According to the Bologna requirements one ECTS credit denotes 25-30 hours of work. However, in the case of the UK, this is understood to be only 20 hours. This implies that workload requirements in the UK are significantly lower compared with the other countries (Roberts, 2007).

2.6.5 Lack of compliance

As mentioned earlier, the Bologna process is a declaration of intent and not legally binding. This allows some flexibility to deviate from the declaration or to extend the deadline for achieving its objectives (Huisman and Van der Wende, 2004). Therefore, the translation of the Bologna declaration is dependant on national policies (Witte, 2004). Evidence suggests that the implementation of the mechanisms of Bologna, like the Diploma Supplement, is still not exploited to the fullest possible extent by several countries. Many are still not familiar with what a DS is (Tauch, 2004; Roberts, 2007). Overall, lack of compliance of the Bologna instruments can act as a serious deterrent to the process.

2.6.6 Relevance to the labour market

An important rationale for having a two-cycle degree structure in place is to ensure that students can choose to enter the job market after the first cycle or continue with the second cycle. However, universities expect a smaller percentage of students to leave only with a bachelor's degree. This perhaps indicates that there is lack of confidence on the first cycle's capability alone to fetch a job. The Trends 2003¹ report suggests that only 10% in Germany, 9% in Austria, 7% in Italy and 4% in France will actually extend currently after a bachelors level (Tauch, 2004). The report also reflects on the fact that professional associations and employers are not regularly consulted in designing and restructuring the curricula, i.e. further diluting the potential of TTSS to deliver employability in the labour market.

2.7 IMPLICATIONS OF BOLOGNA ON DEVELOPING MASTER PROGRAMMES ON EA

Credit allocation: As mentioned above, the recommended requirement for a master degree is 90-120 credits, although the minimum requirement is 60 ECTS. Accordingly, the credit assigned to the common master in EA introduced here is assumed to be 90 ECTS. The master may consist of a minimum of eight modules plus a dissertation. Chapters 6-10 make suggestions for a total of five core modules. Each taught module would have 7.5 ECTS, which will involve around 190 student effort hours and a dissertation having 30 ECTSs. Modules can be adapted to any master course related to EA and can also be taught over a period of either one or two years.

Medium of instruction: In order to internationalise the course and attract a wide audience, the curriculum has been developed in English. EA related modules are frequently taught in planning and management departments/faculties (see chapter 5). The Bologna survey carried out in 2006 by AESOP (Association of European Schools of Planning) indicated the problem faced by some countries in translating local case studies into English. The problem was especially emphasised by representatives from Denmark and the Netherlands. This needs to be considered when trying to develop a curriculum within a non-English-speaking country (Davoudi and Ellison, 2006). The relevant references have been identified along with the module outlines in chapters 6-10. However, local literatures may be incorporated along with international English references.

Specification of engineering departments/faculties: EA related modules are not just taught in planning departments, but also within Engineering and Science departments/faculties (see chapter 5). Engineering degrees are established to include a five year long curriculum in many European countries, including Spain, Sweden, Switzerland, Italy and Germany. Like medicine, engineering is an exception to the converging universities' degree trend across Europe (Tauch, 2004). Introduction of TTSS implies changing the traditional set ups of what is widely perceived to be successful engineering degrees. Therefore, many departments are reluctant to adapt the two-cycle structure advocated through the Bologna process (Tovar and Cardena, 2003). This implies that the credit assigned as well as the student effort hours required in engineering departments will differ from other faculties and departments like planning and management. The modules developed for the PENTA project therefore will need to be modified and adapted in terms of credit requirements and student effort hours to blend with engineering department/faculties.

Module outline: The five core modules that are outlined in chapters 6-10 need to be adapted and adjusted according to the specific needs of the local institutions. To enable this, the modules focus on the essentials of a scientific subject matter. Based on the time and workload requirements of the universities, these can be further expanded. Therefore, they can be taught over a period of twelve weeks as required in a one year master programme that can also be extended to cover a longer duration of study. However, it is expected that the course should at least cover all the subject matters identified in chapters 6-10. Country specific professional associations and employers may be consulted in adopting the curricula based on national needs.

Learning outcomes: As mentioned earlier, learning outcomes refer to the knowledge and skills students should have acquired at the end of their studies. Therefore, the modules have to be prepared, keeping the end result, i.e. the learning outcomes in mind. The learning outcomes, on the other hand, are a result of interrelationship between levels, level indicators and assessment criteria. It should be noted at this stage that 'learning outcomes are statements of essential learning, and as essential learning, they are written at minimum acceptable/threshold (pass / fail) standard' (Moon, 2006).

The learning outcomes for the master in environmental assessment of the PENTA project are proposed to be as follows:

- 1) the students are expected to develop critical awareness of current problems and new insights and understanding of various tools and new processes within the field of EA;
- 2) it is expected that the students will be able to apply their knowledge and enhance their problem solving abilities, within the context of real life situations through case studies and research, or in the development of professional skills, in broader or multidisciplinary areas related to the field of EA;
- 3) it is expected that the students should be able to communicate their conclusions and the knowledge, rationale and processes underpinning these, to specialist and non-specialist audiences clearly and unambiguously;
- 4) the students are expected to be able to integrate knowledge from a variety of sources and disciplines and handle complexity to reflect their judgements as an individual or as a group on social and ethical responsibilities linked to the application of their knowledge and judgements in the field of EA; and
- 5) it is hoped that the students will be able to acquire leadership skills in initiating new debates or research in the field of EA (University of Dublin, undated; Moon, 2006; Gosling and Moon, 2001).

2.8 CONCLUSIONS

The Bologna process has clearly been one of the most ambitious attempts in harmonising and internationalising European education. Whilst the process has its problems, positive impacts are thought to by far outweigh those. The experiences of the 45 signatory countries reflect certain practical problems in translating the Bologna requirements into national policies to cater to domestic as well as international students. However, overall achievements in most countries are quite encouraging. The requirements of the Bologna process are used to develop the common master degree programme on environmental assessment. This can be adapted and modified according to local needs.

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3 Reassessing the direction of postgraduate environmental assessment education: The Manchester experience 1996 - present

By Adam Barker and Carys Jones

This chapter provides reflections on experiences gained from the provision of an established EA related masters programme. The Masters of Arts (MA) in Environmental Impact Assessment and Management (EIAM) at the University of Manchester School of Environment and Development has been running for over ten years. During this period, the institutional and political context of environmental education has continued to change. New agendas, such as the resurgence of strategic planning and climate change adaptation, have emerged, whilst universities have come under increasing pressure to maximise research efficiency. It is therefore timely to reassess the status of postgraduate environmental assessment provision within the UK and explore future needs and opportunities.

3.1 THE CHANGING INSTITUTIONAL AGENDA: FROM ARCHITECTURAL DESIGN TO SUSTAINABILITY

The emergence of environmental assessment education at Manchester is inextricably linked with changing attitudes towards land use planning within the institution. When the Department of Town and Country Planning was established in 1952, it promoted a view of planning which conformed to the established post-war perspective of planning as an exercise in physical determinism. Staff members such as Lewis Keeble (1950-1956), saw planning not as an exercise in balancing the various demands of environment, society and economy, but as “*the art and science of ordering the use of land and the character and siting of buildings and communicative routes*” (Keeble, 1952). This emphasis on planning as ‘design’ continued until the appointment of Brian McLoughlin (1962-1967) in the early 1960s. McLoughlin famously courted controversy at Manchester by suggesting that an emphasis upon blueprint planning would do little to improve our understanding of the need for planning intervention. Instead, McLoughlin, in his 1969 text “*Urban and Regional Planning: A systems approach*”, suggested that not only should planning seek to understand the world as a series of complex and inter-related systems but that such systems should be managed through clearly structured assessment and decision-making stages. McLoughlin’s challenge to the architectural tradition and assertion of the need for evidence based planning paved the way for a broader agenda at Manchester (see Wood and Jay, 2002, for a fuller discussion of the history of the School). In 1976, Christopher Wood was appointed to a lectureship in the Department and brought with him a new environmental consciousness. Building on the new wave of rational planning at Manchester, Wood began to explore the contribution that new assessment procedures and techniques could make to sustainable development. As both a chartered town planner and environmental scientist, Wood was particularly interested in understanding the relationship between development pressure and environmental change.

The most obvious manifestation of this new interest in environmental planning was the creation of the Environmental Impact Assessment Centre (EIA Centre) in 1988. Emerging shortly after the first EU Directive on Environmental Impact Assessment (Directive 85/337/EEC), much of the work of the Centre was geared toward the advancement of EIA research and practice within the EU. As one of several funded EU EIA research centres, the Manchester EIA Centre has been fundamental to EIA knowledge transfer. Key projects undertaken by the EIA Centre for the EU include the “*Five Year Review of the EIA Directive*” in 1991 and the “*Evaluation of EIA performance in the EU*” in 1996. Since then the EIA Centre (now part of the Centre of Urban and Regional Ecology) has extended its international profile beyond the EU and undertaken research for a wide body of national and international funding organisations. In 1997, the Centre was awarded the International Association for Impact Assessment (IAIA) Institutional Award on recognition of its contribution to international practice.

During the mid-1990s, it became clear that there was significant scope for the Centre to impart its research experience to environmental managers of the future. Increasing demand for the provision of professional training programmes at the Centre coupled with the emergence of environmental assessment specialists within UK consultancies, highlighted a potential new market for postgraduate education. On this basis, it was decided in 1996 to establish a postgraduate Masters programme in Environmental Impact Assessment and Management (EIAM).

3.2 THE MANCHESTER MA IN ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT

During initial discussions regarding the MA programme it was apparent that Manchester was in a position to offer a product which differed from many of those already available. Although environmental assessment education was now being provided by a number of UK higher education institutions, very few programmes were available which enabled students to concentrate on the social science dimensions of environmental assessment debates. The majority of programmes available at the time, particularly those at Aberystwyth and Imperial College London, drew on the physical sciences and encouraged students to develop a robust understanding of ecosystem processes. As a spatial planning department (at the time carrying the title of the Department of Planning and Landscape), staff at Manchester were keen to concentrate upon those disciplines which enabled students to develop skills centred on the ‘nature’ of decision making. As a result, the new Manchester MA was developed from the traditions of planning, economics, politics, law and geography. Whilst the national landscape of postgraduate training in impact assessment has altered over the years, there is still a notable variation in the scientific focus of educational provision (see Table 3.1).

It was within the above context that the current programme aims were established. The purpose of the programme is to:

- provide an integrated programme of studies to equip students to undertake the planning and management tasks associated with each of the principle stages in the environmental assessment process; and
- provide an opportunity for students to pursue particular aspects of environmental assessment in greater depth by choice of assignments and by undertaking research on an individually selected dissertation topic.

The programme is intended as a one year ‘fast-track’ conversion programme for well qualified (see discussion of entry requirements below) university graduates. The programme does not assume a prior knowledge of environmental assessment or prescribe the nature of acceptable undergraduate subject areas. This programme is however, specialist, rather than generalist. This is an important distinction to make. As the programme seeks to enable students to secure relevant employment in environmental assessment practice after graduation, the programme has been weighted toward the teaching of ‘core’ impact approaches (EIA, SEA and Auditing) rather than more generic management approaches. This approach differs from those Masters programmes which cover environmental assessment as a ‘pathway’ within a broader environmental management degree package.

Table 3.1: Examples of postgraduate programmes in environmental assessment in the UK

Institution	Programme	Main areas of specialism	Duration
University of Manchester	MA Environmental Impact Assessment and Management	EIA, SEA, Auditing, Spatial Planning	1 Year full time
University of East Anglia	MSc in Environmental Assessment and Management	Environmental Assessment, SEA, Risk Management, Climate Change Science	1 Year full time
Oxford Brookes University	MSc in Environmental Assessment and Management	Environmental Assessment, Ecosystem Degradation and Management + options including GIS and Modelling.	1 Year full time
University of Aberystwyth	MSc Managing the Environment with Environmental Impact Assessment pathway	EIA Theory and Practice, Environmental Sustainability	1 Year full time
University of Liverpool	MA Environmental Management and Planning	Environmental management, spatial planning, environmental assessment	1 Year full time

The programme is structured around two teaching semesters. This is in line with the new structure for timetabling within the University (and with most other universities; see Table 3.1). The first semester concentrates on introducing students to the key components of EIA and provides an introduction to environmental planning, environmental law and environmental science (see Table 3.2). The second semester then concentrates on advancing student exposure to impact assessment approaches. Here, specific attention is given to the teaching of strategic environmental assessment, auditing and appraisal and the practical dimensions of EIA. Students are able to focus on a particular area of interest by undertaking an option chosen from within the School of environment and development or from the Faculty of Engineering and Physical Sciences. Students are also given research training in the second semester, and following the completion of this semester in June, students are then free to undertake a 15,000 word individual research dissertation for completion by September.

The assessment procedures adopted for the MA programme have been structured with a view to the assessment of both, academic and professional skills. This is a difficult balancing act to achieve but one which is essential if the MA is to be recognised by the University as a top-flight social science degree and also by the professional community as an effective introduction to practice. On this basis, three main forms of assessment are integrated with the programme. These are a) the assessment of breadth of knowledge through examinations at the end of the first semester, b) the assessment of depth of knowledge through essays, and c) the assessment of applied skills through individual and group based project work. Practice based exposure is enhanced in this last category of assessment through the use of ‘live’ assessment case studies and by inviting environmental practitioners to assist in assessment design and grading.

The delivery of the programme shows a shift from the more traditional lecture and seminar based approach in the first semester to a more student-centred approach in the second semester using problem-based learning, group work and individual study. Practitioners representing various facets of environmental assessment and management deliver guest lectures in most programme units and the ‘auditing’ element is delivered by a consultant specialising in this area.

Table 3.2: MA programme outline

Semester 1 (Sept-Jan)	Semester 2 (Feb-June)
Environmental Impact Assessment	Environmental Impact Assessment Project
Environmental Planning and Protection	Strategic Environmental Assessment
Environmental Science	Appraisal and Auditing
Environmental Law	[Research training – not credit rated]
	Option
	Dissertation

All programme units except the dissertation (30 ECMRs) are 7.5 ECMTs, ie the programme has 90 ECMTs, similar to the MA developed in this handbook

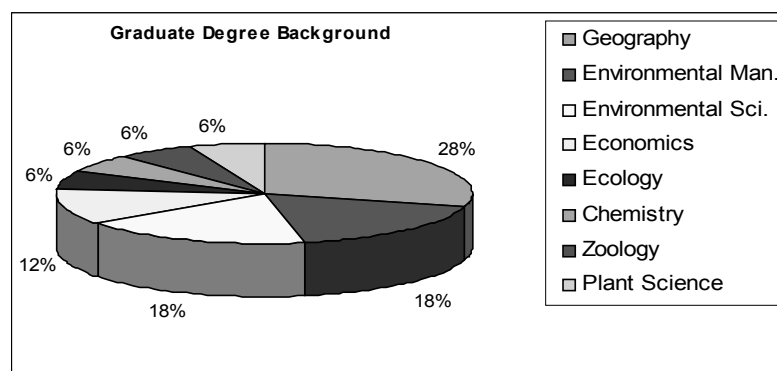
In order to help students manage their academic and professional aspirations, each student is required to produce a Personal Development Plan (PDP) through a series of timetabled meetings with a Personal Tutor. The purpose of the PDP is to encourage students to take responsibility for their own learning and develop skills in career planning and management. Specifically, the PDP process attempts to ensure that students:

- become more effective, independent and confident learners;
- understand the process of learning and develop the ability to relate learning to wider contexts;
- improve their skills for both study and practice;
- are able to articulate their personal goals and develop ways of evaluating their attainment; and
- develop a positive response to academic and professional challenges.

This process has to date proved vital in enabling students to seek appropriate employment opportunities and to perform effectively in interview situations.

In order to gain entry to the MA programme, students must be in possession of a ‘good honours degree’ from a UK university or equivalent. In practice this means that students must have achieved at least an upper-second class degree as an undergraduate. Exceptions are occasionally made where students are able to display related work experience or other valuable life skills. In the last intake for the programme (2006), 17 students were accepted. Of those, 12 had 2.1 degrees and one had a first class degree. Although students come to Manchester from a variety of different institutions, a surprising number come from the elite group of institutions which form the Russell Group. Out of the 14 UK students recruited in 2006, 11 out of 14 were from Russell Group universities. As a ‘fast track’ conversion programme, students with a variety of different subject backgrounds enter the programme. Having said this, however, student entry is dominated by graduates of geography, environmental science and environmental management (see Figure 3.1).

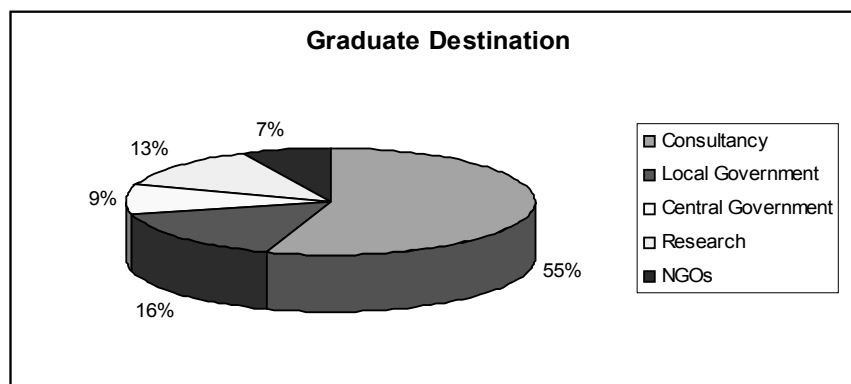
Figure 3.1: Graduate Background Entry 2006



The vast majority of our graduates over recent years have gained employment within the consultancy sector (55%) (see Figure 3.2). The remainder have sought employment within local government, central government, research or NGOs. The main companies which account for this pattern of recruitment include Environmental Resource Management (ERM), Wardell Armstrong, Ecotec and WS Atkins. Most students undertake the MA programme with the specific goal of obtaining employment in an environmental consultancy, which themselves primarily recruit those graduates with a masters degree. The market for employment of environmental graduates at masters’ level has been remarkably buoyant for several years – particularly in the environmental consultancy sector – and this looks set to continue. A number of possible explanations can be provided for the attraction of the consultancy sector. Firstly, consultancies tend to be particularly active recruiters.

Whereas other employers (particularly in the public sector) are reliant upon the national and regional press for advertising, consultancies will frequently contact the University directly to enquire about student availability and will often interview prospective candidates on-site. Secondly, several of the consultancies are able to offer posts in one or more areas of impact assessment activity whereas those going into local authority tend to be employed in a more general capacity. Finally, and perhaps least surprisingly, the salary scale offered by the private sector is significantly more attractive to graduates than in other sectors.

Figure 3.2: Graduate Destinations 1996 - 2003



3.3 FUTURE DIRECTIONS FOR THE MANCHESTER MA

Over the last ten years or more, the Manchester MA has become a well regarded postgraduate programme capable of meeting the varying demands of academia and professional practice. However, during this period there have been distinct changes within the discipline of environmental assessment and within the university sector. In the final part of this chapter we consider the relative merits of the Manchester product and explore the main areas of potential challenge.

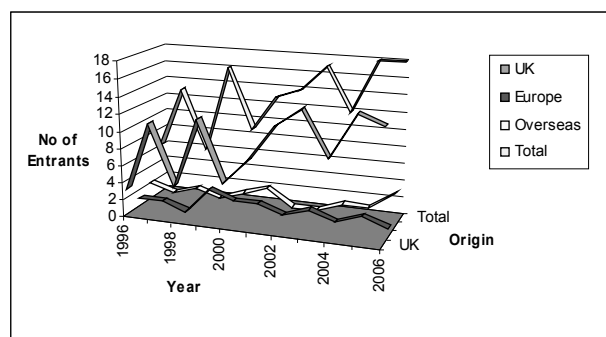
A key characteristic of the programme is its research oriented approach. The MA was designed not as a mechanism for increasing revenue, but as a means of using accumulated research expertise as the basis for improving management capacity within the environmental assessment community. To this end, the MA has proved largely successful. All core staff who teach on the MA are research active and regularly publish in environmental assessment or environmental planning peer reviewed journals. This level of engagement within environmental assessment debates ensures that students are able to receive both a well-grounded and leading-edge education. More fundamentally, the development of a research led approach to programme delivery is a key mechanism for enhancing product resilience. During the ten years that the programme has been running, assessment debates have inevitably changed. The ability to keep track with these changes has been one of the reasons that the programme has survived. For example, early work by Wood and Djeddour in the early 1990s (see Wood and Djeddour, 1992) predicted the growth of SEA as a dominant theme within European environmental assessment. As such the MA has always made provisions for the teaching of SEA and has been able to respond to the ever shifting approaches adopted within in the UK (particularly the transition from environmental appraisal to sustainability appraisal to strategic environmental assessment). Future opportunities are likely to present themselves through the increasing level of climate change research being undertaken within the School. Work by John Handley has, of late, focused upon the consideration of assessment procedures for the evaluation of climate change and the development of responses for adaptation. Climate change assessment is already part of the School's Masters programme in Town Planning and is likely in the future to become a core module within the EIAM MA programme.

A further proven strength of the MA at Manchester has been its position within the postgraduate market. The MA has built on the strengths of the EIA Centre to claim a leading position within the postgraduate environmental assessment market. The programme continues to attract well qualified graduates who have proven to be highly employable upon completion of the degree programme. This market positioning has been partly achieved through a strong sense of product identity. In an environment in which a number of UK universities are offering well-developed postgraduate programmes in environmental assessment, the ability to offer a 'unique' brand has proved fundamental to the continued success of the MA programme. Whilst staff at Manchester are keen to encourage applicants from a variety of different academic backgrounds, the product itself is both 'specialist' and linked closely to a departmental heritage rooted firmly in the social sciences. This perspective has become a valued attribute in a field dominated by the physical sciences.

No state level provisions are available for supporting postgraduates through the MA programme. With university fees currently standing at £3,240.00 per year (Home and EU students, 2007-08), postgraduate education is far from cheap. Previously, the University has been successful in attracting funding for the programme through the European Social Fund (ESF). The funding was secured on the basis of the contribution that the programme made towards employment related training for postgraduates. Usually this provided support for up to ten UK students each year. The cessation of this source adds to the financial burden of students wishing to undertake graduate studies in this area.

Despite these varying strengths, the MA does face a number of distinct challenges over the coming few years. The first of these relates to financial viability. As stated earlier, the MA was not designed as an income generator. Nevertheless, all University of Manchester programmes need to prove cost-effective. From an institutional point of view, recruitment numbers for the MA are relatively low when compared with other options within the School's postgraduate portfolio. As shown in Figure 3.3, student numbers over the first six years of the programme did not rise above 16. Although this means that the programme is able to operate at a profit, these numbers are significantly lower than for the Masters in Town and Country Planning (MTPL) which has been able to attract at least 40 students per year. Arguably, the relative disparity between recruitment figures displays the difference between 'specialist' and 'generalist' education. Ultimately, the ability of the School to provide environmental assessment education will be dependant upon the level of recruitment achieved across both programmes, rather than just the MA.

Figure 3.3: Graduate recruitment statistics-Manchester MA in EIAM



The second major challenge facing the programme stems from the level of institutional restructuring which has taken place amongst School research groupings. Following a review of School based research centres in 2006, it was noted that there was a proliferation of complimentary but also over-lapping areas of research activity. One of the outcomes of this review was to integrate the EIA Centre with the Centre for Urban and Regional Ecology (CURE) led by John Handley. Rather than environmental assessment being pursued through a separate research centre, it is now one of the three lines of CURE activity (along with environmental risk and landscape systems). It could be argued that the loss of the research centre which gave birth to the MA in EIAM will serve to also mark the demise of the MA. Whilst locating environmental assessment research within a new institutional structure will undoubtedly take some time to get used to, it needs to be understood within its strategic context. One of the major strengths of the School has long been its interdisciplinarity. Yet the presence of a plethora of related research centres has, until recently, led to the parallel but independent evolution of different assessment approaches. The merger of the EIA Centre with CURE seeks to ensure that approaches such as EIA and SEA are fully integrated with other areas of assessment focus such as landscape assessment, climate change assessment and flood-risk assessment. As previously discussed, recognition and accommodation of changing assessment trends is essential for programme longevity.

The third and perhaps the most significant challenge relates to the new institutional agenda which has emerged over the last two years. The University has recently embarked on an intensive programme of global reorientation under the title of the "2015 Agenda" (University of Manchester, 2007). The purpose of the exercise is to consolidate the University's global reputation and achieve a ranking within the top 25 universities in the world by 2015. In summary, the main goals of the Agenda are:

- to demonstrate by 2015 that at least 70% of research activity is of international standing;
- to double research grant and contract income by 2015 and substantially increase the proportion of research funding gained from industry; and
- to double the number of postgraduate research students and postdoctoral research students by 2015.

Although this emphasis upon research indicators does not seek to undermine teaching delivery within the University, it does place a significant degree of extra responsibility upon staff to meet expected research targets. As academic staff within the University, and as a result those who teach on the MA, are researchers first and foremost, it is the quality of this research which must be prioritised above all else. Currently, core modules on the MA in EIAM are taught by only 3 full-time members of academic staff. This means that staff must balance relatively high teaching loads (when compared with the University average) against increased research expectations. In this light, programme viability becomes not only a matter of student numbers, but a matter of resource use efficiency. In many instances this could potentially place University staff in a difficult position: prioritise research activity and limit the extent of teaching engagement or actively pursue a teaching agenda and face the consequences of a failure to meet institutional targets. It is arguable, however, that the situation as it relates to the MA is far less dramatic. As the MA has and always will be an extension of research activity rather than an independent area of University interest, it is likely that staff are well equipped to meet the 2015 challenge.

3.4 CONCLUSIONS

Since its inception in 1996, the MA in Environmental Impact Assessment and Management (EIAM) has proven to be one of the leading postgraduate environmental programmes in the UK. During its short history, the programme has witnessed a number of institutional changes and the emergence of new areas of assessment interest. The programme has proved resilient in the face of such changes and continues to offer postgraduate students a challenging programme of academic study, whilst at the same time providing the necessary practice based skills to enable students to gain direct entry to the employment market. The future success of the programme will be dependant upon the continued ability to respond to new opportunities and pressures.

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