

1. INTRODUCTION

CHL Consulting were appointed by The Heritage Council and the Institute of Archaeologists in Ireland to conduct a study of the profile of the archeology profession and education resources on the island of Ireland. In November, 2001, CHL was asked to expand their study to include an analysis of the future demand for archaeologists. We are now pleased to present our draft report on this question.

The objective of the study is to make projections of the likely demand for professional archaeologists over the coming five years, both in general and with specific reference to the management of licensed excavation work occasioned by projects undertaken as part of the National Development Plan, 2000 – 2006.

Projections of the demand for archaeologists over the coming five years will be made under the following scenarios:

Scenario 1: *high growth:* NDP goes ahead as planned, coupled with a high economic growth rate and new areas of work e.g. research sites, marine, forestry and subsidiary services, are developed.

Scenario 2: *low to medium:* NDP is revised, with a longer time-scale for implementation of major projects and there is a modest economic growth rate (3% to 5% p.a.).

Scenario 3: *zero growth:* economic performance weakens sharply; NDP is cut back

A key feature of the assignment was the construction of a Demand and Supply Model for archaeologists. The work in developing this model involved

- survey of employers (archaeological consultants, Dúchas, etc.) with regard to existing manpower levels, vacancies, recruitment rates and expectations for the future;
- consultations with major purchasers of archaeological services, including the NRA, major developers, etc. concerning likely trends in demand;
- consultations with representative bodies and development agencies, including CIF, Irish Home Builders Association, ESRI, etc., concerning future trends;
- consultations with universities.

The survey of employers was administered during February by means of mail-outs with follow-up personal interviews either by phone or face-to-face. In the absence of a comprehensive register of archaeology employers in Ireland, the mailing list was based on the listings provided by Duchas and the Institute of Archaeologists in Ireland along with data from other sources including the Irish Heritage & Environment Directory, the internet and the Golden Pages.

In total 94 questionnaires were sent out to organisations in the consulting, museum, academic, public, private, tourism and publishing sub-sectors to ensure that all organisations where qualified archaeologists could be employed would be included. Due to the disparity among organisations in the sector, especially in terms of numbers employed, it was ensured that each employer was contacted to prevent bias in the results. The survey indicates that qualified archaeologists are currently directly employed by 55 of these organisations.

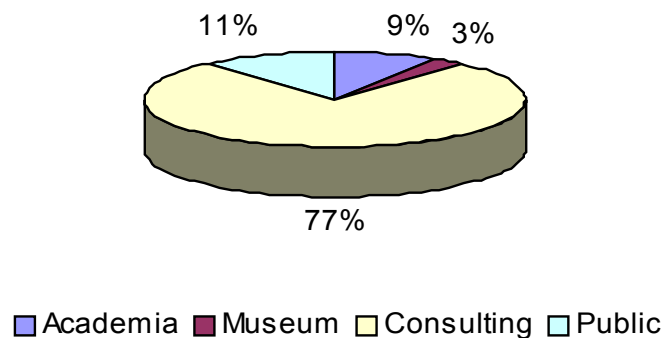
Consultations with the major purchasers of archaeological services, the representative bodies and the universities took place throughout January and February. Secondary information such as the National Development Plan 2000-2006, press releases and government publications were also reviewed.

2. EXECUTIVE SUMMARY

2.1 EMPLOYMENT IN THE SECTOR

There are an estimated 650 qualified archaeologists currently working in Ireland both North and South. Employment in the archaeology sector has increased greatly in recent years, primarily as a result of large-scale infrastructure development and urban renewal. The main area of employment is consulting which accounts for just over three quarters of all archaeologists and includes excavation directors, project managers, researchers, excavators etc. The museum sub-sector accounts for just 3% of qualified archaeologists, with the majority of archaeologists in the museum sub-sector being employed as curators. Chart 2.1 illustrates the distribution of numbers employed in the different sub-sectors.

Chart 2.1: Employment Demand by Sub-sector



2.2 ECONOMIC DRIVERS

The economic drivers in the archaeology sector are public sector infrastructure investment, current expenditure by central / local government; and private sector development. Public sector infrastructure development, especially road improvement and development schemes, is currently the main economic driver in the sector. There are approximately 300 archaeologists working on road development schemes around the country. This high level of demand is set to continue as the Government has committed €5.59 billion for road construction and improvement, as part of the National Development Plan 2000-2006.

Private sector development is also a major driver of demand. The gross value of private sector construction output is estimated at €9 billion for 2001, which equates to roughly 9% of GNP. Although 2001 saw a decline in private sector construction, the medium term prospects for the construction industry as a whole remain positive.

2.3 MEDIUM TERM DEMAND FOR ARCHAEOLOGISTS

The majority of companies anticipate that there will be an increase in the demand for archaeologists over the coming five years, both for the profession as a whole and for their individual companies/organisations. Projections of the demand for archaeologists over the coming five years are made under the following scenarios: high growth, low to medium growth and zero growth and are illustrated on Chart 2.2.

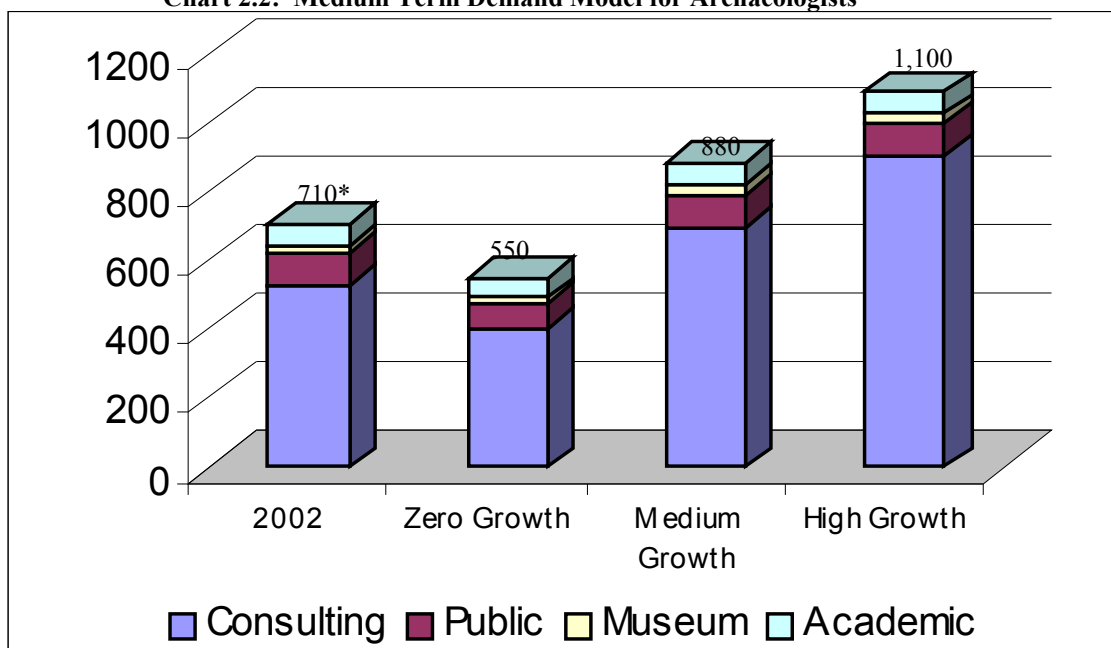
Scenario 1: high growth: NDP goes ahead as planned, coupled with a high economic growth rate and new areas of work e.g. research sites, marine, forestry and subsidiary services, are developed.

Scenario 2: low to medium: NDP is revised, with a longer time-scale for implementation of major projects and there is a modest economic growth rate(3% to 5% p.a.).

Scenario 3: zero growth: economic performance weakens sharply; NDP is cut back

The most significant demand will be in consulting/contracting. The main determinant of the demand will be the rate of implementation of the National Development Plan. There is only likely to be marginal growth in the numbers employed in the academic and public sub-sectors, as changing economic conditions do not have as an immediate impact.

Chart 2.2: Medium Term Demand Model for Archaeologists



* Figures for 2002 include current vacancies

2.4 SUPPLY OF ARCHAEOLOGISTS

The indigenous internal supply of archaeologists is the output from higher education institutions in Ireland (Republic and Northern Ireland). It is estimated that there are about 240* graduates from undergraduate archaeology courses annually, including both single and joint honours degrees. However the numbers graduating from courses in archaeology far exceed the numbers pursuing archaeology careers – approximately 15% to 20% of graduates with primary degrees. There are about 90* students studying archaeology at post graduate level, either by research or through taught courses.

The numbers studying archaeology is set to increase with a number of higher level institutions planning on introducing new courses in the next five years. The Sligo Institute of Technology is planning to introduce a four year Bachelor of Science Degree in archaeology to begin in September 2002, which, if given the go-ahead, will increase undergraduate output by up to 10%.

External supply is determined by the numbers of foreign consultants working here. Of the 650 qualified archaeologists currently working, 18% are overseas staff. The majority of overseas staff are employed in the consulting/contracting sub-sector. Overseas consultants comprise 22% of the total numbers employed in consulting. Due to the large number of road projects the National Roads Authority have considered recruiting a number of international consulting companies to work on future schemes.

2.5 DEMAND/SUPPLY GAP

Lack of capacity in the archaeological sector is a major constraint. The fieldwork survey has found a severe shortage of archaeology staff, especially in relation to licensable archaeologists. Currently, there are an estimated 170 licensable archaeologists in Ireland. But there is an urgent requirement for many more – figures supplied by Duchas show that the number of new excavation licenses issued each year has increased from 60 in 1990 to 1,069 for the first ten months of 2001. The number of first time applicants for excavation competency interview has increased but the failure rate can be as high as 50% at each batch of interviews. Duchas have endeavoured to ameliorate the situation by running seminars for interview candidates and it is hoped that this will improve the success rate.

Recruitment difficulties have become a significant issue for a number of companies and over a third (35%) of organisations have employment vacancies at present, amounting to a total of about 60 positions. Just over a quarter (26%) of vacant positions are for full-time permanent archaeological staff, 70% are for contract archaeologists for project work and the remainder (4%) are for other archaeological staff. The majority of vacancies (58%) are for positions with consulting/contracting firms.

* These figures are subject to revision pending receipt of further data from Queens University

Employers in the consulting sub-sector are experiencing difficulty in filling these vacant positions. Some of the difficulties mentioned by employers in recruiting staff are lack of suitably qualified and experienced staff at all levels and inadequate resources to offer competitive fees.

2.6 IMPLICATIONS

Based on industry projections and the current outlook for implementation of the NDP and, in particular, the roads programme, the shortfall in the supply of qualified archaeologists will increase in the medium term. At present, there is a shortfall of 60 archaeologists and this will increase to 230 during the period up to 2007 if the present supply does not change.

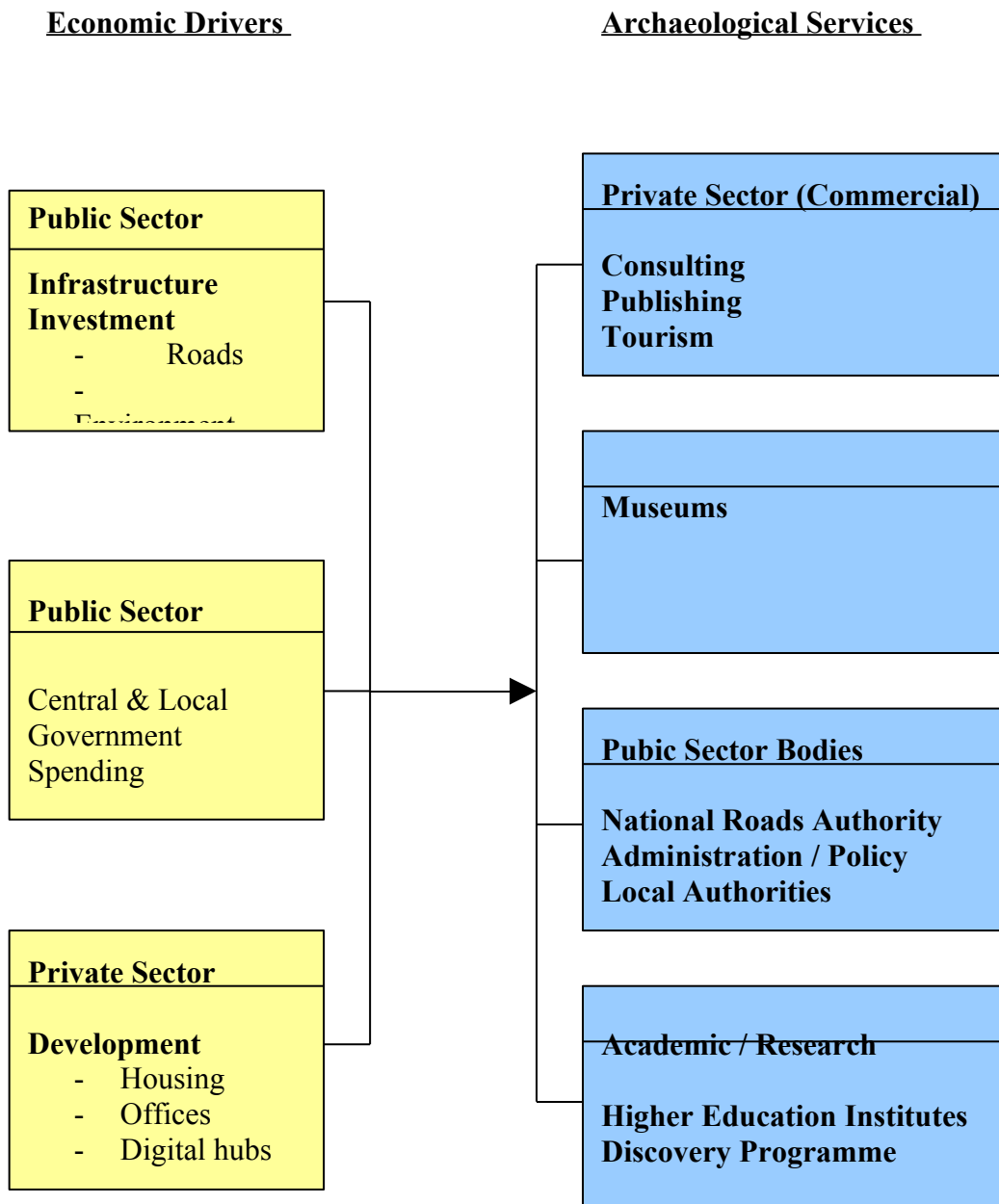
The age-profile of the profession – the current average age is 37 years – suggests that the number of retirements on age grounds is very low. Other enforced losses (due to sickness, injury and death) are also likely to be very low. On the other hand, the number of new entrants emerging from the universities is substantial, with an estimated 20% of these (about 80 persons) apparently interested in pursuing a career in archaeology. This intake would be sufficient to overcome the current shortfall within two to three years, if all new entrants stayed in the profession. However, anecdotal evidence from consultees and survey respondents indicates that there is a high attrition rate among young archaeologists.

In light of this analysis, it is not recommended that universities seek to increase their output of archaeology graduates specifically to meet the current high level of demand for archaeologists. They already produce enough and, moreover, there is a temporary balloon in demand due to the roads programme which will be reduced after 2007. The more appropriate measures therefore are:

- to step up the level of recruitment from abroad,
- to continue to run seminars for first-time licence applicants with a view to improving the success rate,
- to introduce training programmes for archaeologists, especially in relation to field archaeology,
- to improve the terms and conditions of employment for archaeologists in the commercial sector to attract and retain more staff,
- to develop more attractive career structures in the profession.

2. STRUCTURE OF THE ARCHAEOLOGY SECTOR

The demand for archaeologists comes from companies, institutions and other organisations requiring their services. The economic drivers of this demand are infrastructure investment, private sector development and current expenditures by central and local government. The structure of the sector is as follows



3.1 ECONOMIC DRIVERS

The economic drivers in the archaeology sector are public sector infrastructure investment, current expenditures by central / local government and private sector development.

Public Sector – Infrastructure Investment

The National Development Plan (NDP) outlines the resources to be allocated for development over the period 2000 – 2006. It will involve a total investment of €52 billion, of which €22.4 billion has been allocated to economic and social infrastructure development. The table below outlines funds available for economic and social infrastructural development in each of the sub-sectors.

Table 3.1: Resource Allocation for Social & Infrastructural Development, 2000-2006

	€ Million
National Roads	5,968
Public Transport	2,837
Water & Environment	3,213
Energy	183
Housing	7,619
Health	2,539
TOTAL	22,361

The Government has committed €5.97 billion for national road improvements and maintenance. €5.59 billion is for road construction and improvement works, with the remainder (€0.38 billion) for maintenance of the network. A further €1,524 m will be provided for non-national roads under the Productive Sector Operational Programme Section of the NDP. This represents almost a threefold increase on the expenditure of €2 billion in the period 1994-1999.

Of the €5.59bn, 23% (€1.27bn) is expected to be funded by the private sector i.e. through public private partnerships. One of the main allocations of these funds will be on improving five major inter-urban routes to motorway/high quality dual carriageway standard, which will require the completion of approximately 800 kilometres of new road. Expenditure on improvements in the national road system amounted to €622 million in 2000 and €908 million in 2001. These figures do not include amounts spent on maintenance schemes and planning/design projects.

The NDP also envisages a significant level of housing development. Unlike the two previous National Plans, the current Plan includes social housing capital. In total €7.6 billion is being provided for social and affordable housing over the period of the Plan, of which €5,936 million will be invested in the South and Eastern region and €1,682 million will be invested in the Border, Midland and Western region, reflecting demographic projections. The priorities for investment under the Plan include additional local authority housing units, an increase in output of the voluntary housing sector and the affordable housing/shared ownership schemes. A further €131 m will be provided for village and urban renewal under the Productive Sector Operational Programme Section of the NDP.

However, it is important to note that the National Development Plan is 'indicative'. Therefore any changes to economic and social circumstances may result in altered priorities and redistribution of resources.

Public Sector – Central & Local Authority Spending

Local Authority capital expenditure is financed primarily (80%) out of specific grants from central Government. The provisions for roads are financed through the NDP. Only a small proportion of current spending is allocated to archaeological services.

The resources to be allocated to the Department of Arts, Heritage, Gaeltacht and The Islands for 2002 is an estimated €345 million, representing an increase of 20% on last year's figure. The table below outlines the estimated expenditure of the Department of Arts, Heritage, Gaeltacht and the Islands in 2001 and 2002 on Arts & Culture and Heritage.

Table 3.2: Estimates of Expenditure of the Department of Arts, Heritage, Gaeltacht and the Islands on Arts & Culture and Heritage

€ Thousand		
Estimated Expenditure	2000	2001
Arts & Culture	24,052	28,492
- Cultural Projects	3,197	4,158
- Cultural Development	6,430	6,730
- Heritage Fund	635	3,809
- Other	13,790	13,795
Heritage	90,385	102,671
- Heritage Council	8,255	8,425
- National Monuments & Historic Properties	40,594	39,537
- Other	41,536	54,709
Architecture/Archaeology Inventory	660	660

Source: Government Publications

Private Sector Development

The private sector experienced considerable growth in economic between 1994 and 2001. However, in the last twelve months there has been a downward shift in the rate of economic growth, mainly as a result of:

- downturn in global economy, especially in the IT industry;
- the foot and mouth disease crisis, especially in relation to the tourism and agriculture sectors;
- the impact of the tragic events of September 11th.

Private sector construction is a major sector of the Irish economy. The gross value of private sector construction output is estimated at €8.9 billion, which equates to roughly 9% of GNP. 2001 saw a substantial slowdown in the construction industry, with the overall rate of growth falling to 2%, although there were considerable variations in performance between different sectors of the industry. The volume of output in the private sector fell by an estimated 4% in 2001, in contrast to a growth of 14% in the public sector. The following table details performance by the construction sector and estimates for 2002.

Table 3.3: Growth Rates & Estimates for the Construction Industry, 2001 & 2002

Value	€m	Volume	Changes	%	+/-	2000	2001	2002 (anticipated)
Private Sector								
Housing								
								General Contracting
								9,000
								5,600
								3,400
								-4%
								-10%
Public Sector								
Housing								
General Contracting								
								Civil Engineering
								5,700
								900
								1,400
								3,400
								+14%
								+10%
Repair & Maintenance								
								4,800
								+3.5%

Source: CIF – all figures rounded by CHL

3.2 ARCHAEOLOGICAL SERVICES

3.2.1 Private Sector Commercial

Consulting Companies

(i) **Indigenous**

There have been significant increases in the number of archaeology consultancy companies in recent years. Currently, there are approximately 30 archaeology consulting companies in Ireland both North and South¹. The majority of firms are based in the Republic, with about 8% located in Northern Ireland.

In comparison with mainland European countries, where archaeological services are provided by government bodies and/or universities, the number of private consulting companies based here is significant. A few archaeology firms are part of or are associated with university archaeology departments (e.g. the Archaeological Services Unit based at UCC and the Irish Archaeological Wetland Unit at UCD). However, the vast majority are independent consulting companies specialising in projects associated with public sector infrastructural works and private sector developments. Within the sector there is a growing sub-sector of consultancy firms specialising in underwater and/or marine archaeology.

Of the 30 consultancy firms currently in operation in Ireland, approximately 10 are well established in the market, of which the more prominent are:

- Archaeological Development Services Ltd,
- Eachtra Archaeological Services,
- Margaret Gowen & Co. Ltd,
- Valerie Keely Ltd.

In general the consultancy firms comprise a small permanent full-time core staff and employ individuals on a contract or part-time basis for jobs as required. With the exception of the main firms mentioned, the average size of archaeology consulting companies is small, having between 3 and 5 staff core staff.

¹ *There is no single composite register of archaeology consulting firms in Ireland. The estimated number of firms is based on the listings provided by Dúchas and the Institute of Archaeologists in Ireland along with data from other sources, including the Irish Heritage & Environment Directory, the internet and the Golden Pages.*

The range of services provided by consulting companies include:

- assessment
- testing
- monitoring
- excavation
- survey work – digital, topographical, underwater, aerial, architectural, geophysical, monument/building etc.
- conservation
- post excavation services
- environmental impact assessment
- project management.

(ii) International

Some international firms have set up subsidiary archaeology offices in Ireland e.g. Headland Archaeology and Babtie Group.

Publishing

Archaeological publications, such as text books, excavation reviews and magazines are a small but growing sub-sector. One of the main publishers of books and magazines on Irish archaeology and heritage is Wordwell Ltd, who publish the Excavations Bulletin and the quarterly magazine Archaeology Ireland. Wordwell is also the primary distributor of publications by Dúchas and The Heritage Council. A number of the archaeological and historical societies publish various newsletters and articles. In general, these companies employ archaeologists on a part-time free lance basis.

Tourism

Ireland is rich in archaeological sites and many of these sites and monuments are major tourist attractions, e.g. Newgrange and its interpretative centre attract over 200,000 visitors annually. Indeed, visiting historic sites is the most popular activity among tourists visiting Ireland. Specialist, history and archaeology tours/holidays are also becoming increasingly popular. These specialist holidays include visits to ancient sites, monuments, archaeological digs etc. Although archaeological tourism is a small sub-sector of the tourism industry in Ireland, a number of specialist companies have already been set up to cater for this market including Guidelines Tourism Ltd, Connemara Walking Centre and Ancient Ireland Tours among others. In general, archaeologists work in tourism on a freelance or consulting basis.

3.2.2 Museums

The museum sector has expanded rapidly over the past two decades, with the expansion of established institutions and the opening of new museums. The Museums and Archives Committee of The Heritage Council has produced figures which show that the number of museums in the Republic of Ireland has grown from 12 in 1960 to 120 in 1984 and 217 by 1998. Further new museums have opened since 1998. This number excludes most of the visitor centres operated by Duchas.

Many curators in the museum sector are archaeologists, and quite a number of archaeologists are employed by the major national institutions, including the National Museum of Ireland, the Ulster Museum and the Chester Beatty Library. The National Museum also has a major role in relation to archaeological licensing and the designation of other museums as repositories for receiving and holding archaeological objects.

3.2.3 Public Sector Bodies

These include Duchas, the Heritage Council, Local Authorities and the National Roads Authority.

Duchas, The Heritage Service, is part of the Department of Arts, Heritage, Gaeltacht and the Islands. Duchas is responsible for implementing the National Monuments and Wildlife Acts, archaeological surveys, architectural surveys and is a statutory planning consultee. Their functions also include the maintenance of and visitor access to monuments, making recommendations for preservation orders and licensing of archaeologists.

The archaeological services provided by Duchas relate to:

- regulation
- administration and policy
- archaeological survey
- funding
- identification of projects
- licensing.

The Heritage Council is an independent statutory body established under the Heritage Act, 1995 and is funded by the Department of Arts, Heritage, Gaeltacht and the Islands. Its role is to propose policies and priorities for the identification, protection, preservation and enhancement of the national heritage. The Heritage Council supports and promotes projects in the following areas: archaeology, architecture, education, waterways, museums and wildlife.

In relation to archaeological matters The Heritage Council is advised by the statutory Archaeology Committee, whose role is to implement functions delegated by the Council and advise the Council on policy and actions in archaeology. The Council is supporting a number of country wide projects.

Local Authorities are responsible for the construction, improvement and maintenance of roads and bridges in their area, as well as the provision of services such as water and sewerage, and the development of public housing. Works in all of these areas may require archaeological investigations. The NRA is funding the employment of project archaeologists in local authorities with specific reference to the roads programmes under the NDP. To date, 14 have been appointed. Local authorities may also employ archaeologists as curators in County museums.

The **National Roads Authority (NRA)** retains overall responsibility for the planning and supervision of construction and maintenance of national roads. In general, the NRA discharges its functions through the relevant local authorities and, as stated above, has recently appointed 14 project archaeologists to local authorities to oversee the smooth running of the archaeological elements of road projects. Archaeological services necessary in relation to road construction include an impact assessment during the planning stage, testing during the preliminary construction phase and resolution/excavation of archaeologically significant sites.

There are approximately 300 archaeologists working on road development schemes around the country according to the NRA and some of the larger schemes, such as the South Eastern Motorway have up to 195 archaeologists / site workers. There can be as many as 2/3 archaeological sites per kilometre. In relation to current road schemes this equates with approx. 50 archaeologists working on the M1 route, and between 40-50 archaeologists working on the N11 route.

3.2.4 Academic / Research

There are eight universities involved in teaching archaeology. Of these, five have specific departments and degree courses in archaeology, viz:

- Queens University,
- University College Dublin,
- University College Cork,
- University College Galway,
- University of Ulster.

Archaeology modules are also taught in Trinity College, National University of Ireland Maynooth and Galway–Mayo Institute of Technology as part of other courses. However, these institutions do not teach specialist courses in archaeology. The Institute of Technology Sligo is currently developing a Bachelor of Science degree in Archaeology which is due to start in September of this year, subject to the approval process.

The services provided by university departments of archaeology include:

- education and training
- academic teaching staff
- advancement of archaeological research – including grants and facilities
- services to the community – including the provision and distribution of education and information throughout the community.

The Discovery Programme, established in 1991, is an archaeological research institution funded by the Heritage Council. The aims of the programme are to develop a comprehensive and coherent understanding of Ireland's past, in terms of human life and to present the results of this research. The research is generally conducted through a series of projects, typically consisting of a team of director and research archaeologist and support staff. The research findings are presented through their website, publications (monographs, reports, booklets, journal articles) and lectures. The Discovery Programme also provides details on its technological base and how these technologies can be applied.

4. DEMAND FOR ARCHAEOLOGISTS

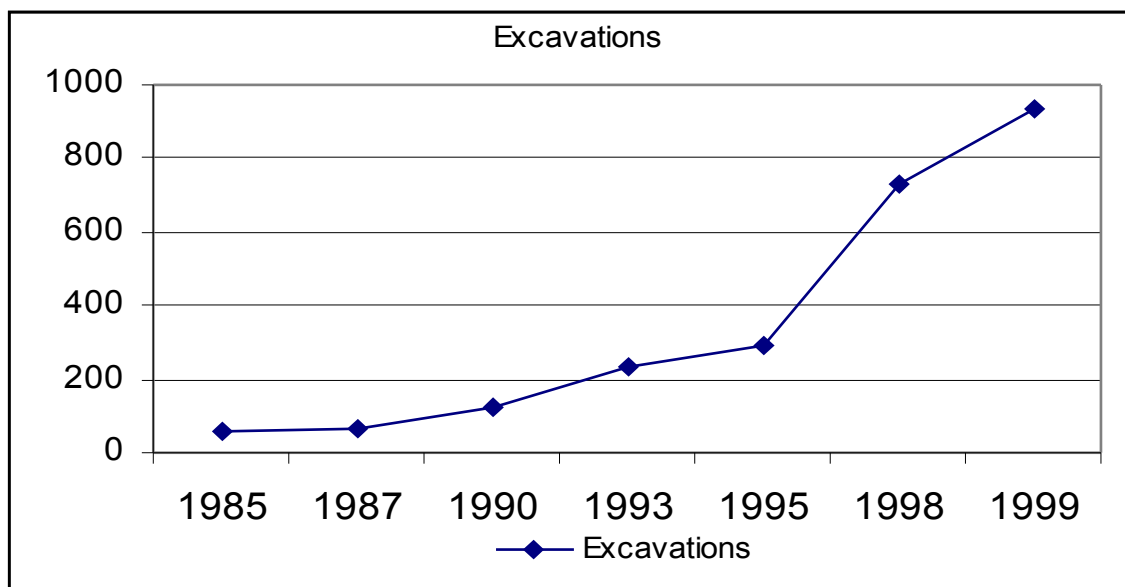
There are an estimated 650 qualified archaeologists currently working in Ireland both North and South. At the time of writing there were a further 60 vacancies for archaeologists, bringing total demand to 710. Employment in the archaeology sector has increased greatly in recent years primarily as a result of large scale infrastructure development and urban renewal

Site Excavations

Although there is no information on the evolution of demand, the increasing number of site excavations gives an indication of demand for archaeologists. There were an estimated 933 excavation sites in Ireland (North and South) in 1999, an increase of over 300% on the number of excavations in 1993. The number of new excavation licences issued in 2000 and the first ten months of 2001 were 956 and 1,069 respectively, and the number of site excavations is expected to be in the region of 1,200 in 2002. The majority of excavations relate to road developments, building works and urban renewal. However, not all of these excavations will be of archaeological significance and warrant detailed investigation.

The increased number of site excavations in recent years are a result of the improvements to road infrastructure (as part of the National Development Plan 1994-1999) and the building boom in urban areas, as reflected by the proportionally high numbers of excavations in Dublin, Louth and Kildare. The chart below outlines the growth in site excavations since 1985.

Chart 4.1: Excavations in Ireland, 1985 - 1999



Source: *Excavations Bulletin*

4.1 EMPLOYMENT DEMAND BY SUB-SECTOR

The main area of employment is consulting, which accounts for just over three quarters (77%) of all archaeologists. The chart below details the numbers employed in the different sub-sectors

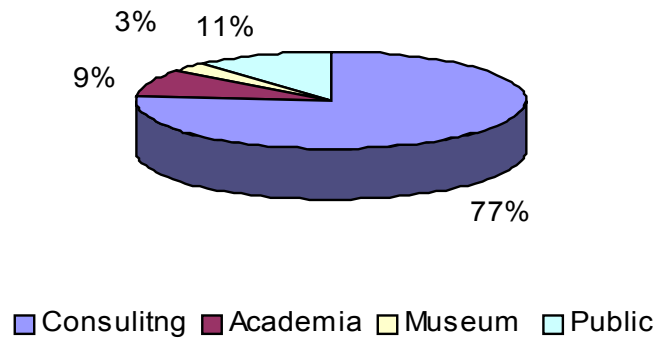


Chart 4.2: Employment Demand by Sub-Sector

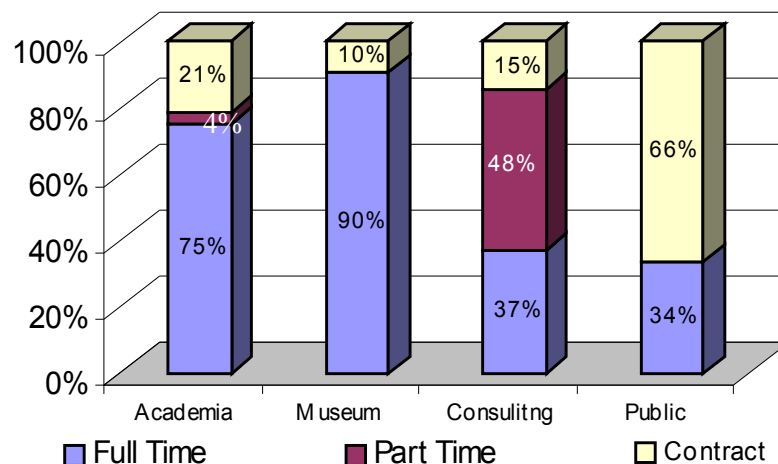
Just over a tenth (11%) of qualified archaeologists are employed in the public sector. The main employer in this sub sector is Duchas, who employ 37 qualified archaeologists. There are 16 full-time permanent archaeologists employed at present in the National Roads Authority – 15 based with the local authorities and a project archaeologist based in the NRA head office in Dublin.

The survey findings indicate that archaeologists are employed on a freelance or consultancy basis in the tourism and publishing sub-sectors, and are also employed by other archaeological organisations on either a full-time or a contract basis.

Status of Employment by Sub-Sector

Full time staff account for 42% of the workforce; 36% are part-time employees and the remainder (22%) are contract workers.

Chart 4.3: Status of Employment by Sub-Sector



The consulting sub-sector employs the largest number of part-time employees. There is also a high proportion of contract staff working in the public sector. This is largely a result of the difficulties that all public sector organisations have in recruiting permanent staff i.e. funding and job quotas.

4.2 EMPLOYMENT VACANCIES

Over a third (35%) of employers have employment vacancies at present. On average there are 3 vacant positions per company and a total of 60 positions were vacant at the time of writing. Just over a quarter (26)% of vacant positions are for full-time permanent archaeological staff, 70% are for contract archaeologists for project work and the remainder (4%) are for other archaeological staff.

Based on the survey responses, the estimated distribution of vacancies by job category and sub-sector are illustrated on charts 4.4. and 4.5.

Chart 4.4: Employment Vacancies by Job Status

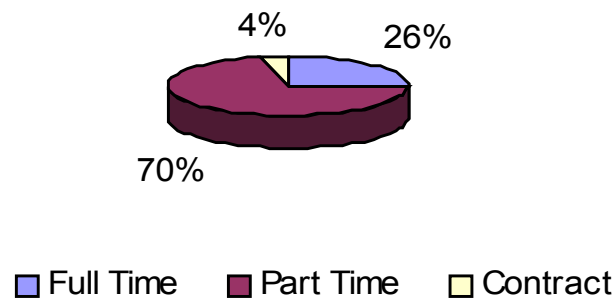
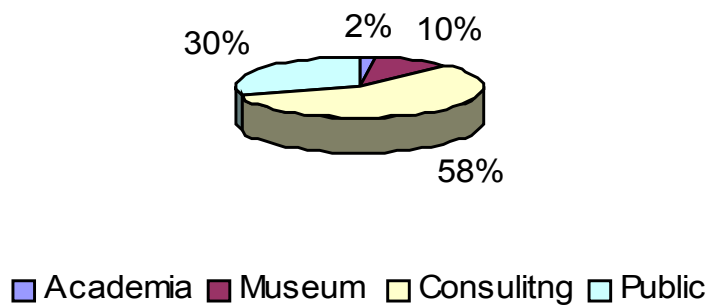


Chart 4.5: Employment Vacancies by Sub-Sector



Two thirds of consulting companies are experiencing difficulties in filling the vacancies. One company reported they had only one response to an ad they had placed recently. Respondents in the other sub-sectors do not report major difficulties recruiting staff.

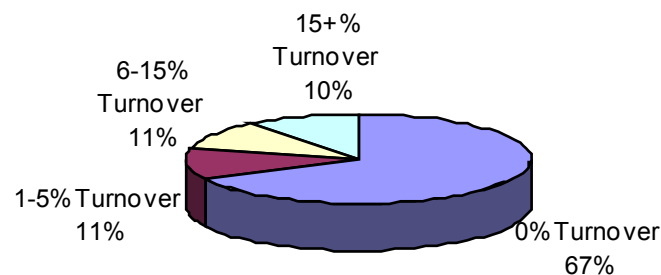
The difficulties mentioned by employers in recruiting staff are:

- Lack of available licensable archaeologists,
- Lack of suitably qualified staff,
- Lack of supervisors and project management staff,
- Due to a lack of resources some companies cannot offer full time positions – it is more difficult to attract individuals for part time positions
- Unwillingness on part of some supervisors to try to get their license
- Lack of experienced archaeologists with broad based skills, including writing and communication skills, and with a combination of field and desk work
- Lack of unqualified site workers.

4.3 STAFF TURNOVER

Permanent staff turnover rates are very low, with the majority of employers (58%) indicating no turnover of full time permanent archaeological staff. Turnover rates of permanent full-time staff are illustrated on Chart 4.6 below.

Chart 4.6: Staff Turnover Rates



On the other hand, there is considerable mobility among part-time and contract employees, especially in the consulting sector. This has implications for continuity of work (especially in relation to post-excavation research and publication), staff training and development and employment terms and conditions.

4.4 FACTORS CONSTRAINING DEVELOPMENT

During the survey, companies were asked to indicate the major factors constraining development. The responses differed with regard to public (including the museum and academia sub-sectors) and private sector organisations.

Public Sector

The main factors which are considered to be affecting development in the public sector are:

- Lack of funds,
- Fixed salary levels for jobs,
- Difficulty in getting sanction for additional staff,
- No history of archaeological structure in local authorities
- Lack of licensable archaeologists
- Downturn in the economy,
- Slow down in the implementation of the NDP.

Private Sector

The main factors which are considered to be affecting development in the private sector are:

- Lack of sufficient licence holders - there is up to a 50% failure rate among first time applicants at the excavation competency interview stage.
- Lack of consistency in the implementation of the NDP as a result of the economic downturn,
- Archaeologists not getting management experience as part of their training,
- Lack of available archaeologists in all areas, including researchers, field geophysical staff, experience staff in report production and survey work,
- Lack of consultation between the private sector and those representing them i.e. Duchas, Heritage Council, Department of Arts, Heritage, Gaeltacht and the Islands,
- Initial outgoings and overheads are high as there can be a delay between the completing the job and payment,
- Procedures, guidelines and criteria not clear for obtaining Duchas licenses,
- Margin on jobs are very small, which makes it difficult to employ permanent staff as companies have to keep wages low to win tenders.

5. SUPPLY OF ARCHAEOLOGISTS

5.1 INDIGENOUS SUPPLY (Republic and Northern Ireland)

These are the outputs of the archaeology courses in Irish institutions.

5.1.1 Graduates

Undergraduate Courses

In 2001/2002 academic year, seven universities and institutes of higher education are offering degree/diploma/certificate courses which include modules in archaeology.

The third level institutions offering single/joint honour degrees in archaeology are:

- Queens University
- University College Cork
- University College Dublin
- University College Galway

Archaeology can be studied either as a single honours subject or combined with another subject, such as history or a language to form a joint honours degree. It is more common for students to follow a joint honours course.

Trinity College, the National University of Ireland Maynooth and Galway –Mayo Institute of Technology teach diploma and degree courses which feature modules in Archaeology. However archaeology is not be the main focus of these courses.

Subject to approval, Sligo Institute of Technology is planning on introducing a single honours 4 year degree course in archaeology in September 2002.

Postgraduate Courses

Postgraduate taught courses in archaeology are offered by:

- Queens University
- University College Cork
- University College Dublin
- University of Ulster

Post graduate archaeological studies through research are offered by all nine tertiary level institutions. The numbers doing Masters and Phds through research varies from year to year and is often dependent on the resources available to the department. Queens University and UCG plan to introduce post graduate taught archaeological degrees.

Courses currently available and their duration are outlined in the table overleaf.

Table 5.1: Tertiary Level Courses in Archaeology

Institution	Taught Courses	Duration	Annual Output of Graduates
Queens University	• Diploma Palaeoecology		x
	• Diploma in Archaeology		x
	• MA Palaeoecology	1 year	3
	• MA in Archaeology	1 year	7
University College Cork	• Bachelor of Arts (Archaeology)	3 years	71
	• H. Dip. In Archaeology	1 year	5
	• MA in Archaeology	1 year	11
University College Dublin	• Bachelor of Arts (Archaeology)	3 years	70/80
	• H. Dip in Celtic Studies	1 year	will not be offered for 2002/2003
	• M.A. Landscape Archaeology	1 year	4
	• M.A. in Archaeology of Art & Architecture	1 year	1
University College Galway	• Bachelor of Arts (Archaeology)	3 years	30-50
University of Ulster	• Post Grad Diploma/MA in Maritime Archaeology	1 year	8-10
Trinity College	• B.A. Medieval & Modern History - Specialising in Medieval Archaeology	4 years	15
Galway-Mayo Institute of Technology	• B.A. Heritage Studies	4 years	25*
NUI Maynooth	• Bachelor of Arts (B.A in History & B.A. in Local & Community Studies contain archaeology modules)	3 years	145*

*These students will have completed archaeology modules but would not have specialised in the subject.

One of the main factors influencing enrolment in postgraduate studies in archaeology is socio-economic activity and associated job opportunities. When the market place is quiet and job opportunities are uncertain, the numbers enrolling in postgraduate studies increase. The number of postgraduate opportunities are also dependent on the resources available to the archaeology department of a particular university/institution. The average annual postgraduate enrolment in the different institutes is outlined in the table below.

Table 5.2: Average Annual Postgraduate Enrolment in Archaeology

Teaching Institution	Taught Courses	By Research	Total
UCD	5	3-6	8-11
UCC	16	4	20
UCG	-	6-10	6-10
University of Ulster	8-10	4	12-14
Queens University	x	10	10 +x
Trinity	-	6	6
NUI Maynooth	-	3	3
GMIT	-	1-2	1-2

The increase in the numbers studying archaeology is set to continue with a number of universities and institutions planning on introducing new courses in the coming 5 years. Queens University and University College Galway are planning on introducing a taught Masters next year and the University of Ulster intends to develop 2 more courses which will more than double the numbers currently studying archaeology there. As stated above, the Sligo Institute of Technology is also planning on introducing a degree course for the academic year 2002/2003.

5.1.2 Graduates Pursuing Careers in Archaeology

The numbers graduating from courses in archaeology far exceeds the numbers pursuing archaeology careers. Of individuals graduating annually, only about 15% to 20% will go on to work in the archaeology sector². It is unknown how many of these actually stay in archaeology for the long-term – anecdotal evidence suggests that the drop out rate can be quite high as a result of poor terms and conditions of employment and a lack of career structure.

² These figures are estimates by the universities as no official data are kept regarding employment of graduates.

Table 5.3: Estimated Number of Graduates Pursuing Careers in Archaeology

Teaching Institution	No. of Graduates Per Annum	% Working in Archaeology	Total Employment in Archaeology
UCD	70-80	10-15%	7-11
UCC	70	15-20%	10-15
UCG	30-50	15-25%	6-10
Queens University	x	x	x
University of Ulster (post grads)	12-14	90%	11-12
Trinity (specialising in archaeology)	15	15-20%	2-3
NUI Maynooth	n.a.	n.a.	3-5
GMIT	n.a.	n.a.	1-2

5.2 EXTERNAL SUPPLY

Employment of Non-Irish Nationals

In order to fill staff and skill shortages, the profession has been recruiting outside Ireland. One third of companies surveyed indicated they had recruited foreign staff. Companies in the consulting sub-sector were most likely to have recruited abroad, with almost half (46%) indicating they had recruited foreign staff. The main source countries are:

- Sweden
- USA
- Britain
- Canada
- Spain
- France
- Other EU countries
- New Zealand (mentioned by one company)

Of the estimated 650 qualified archaeologists currently working in Ireland 20% are from overseas. The only sub-sector where significant numbers of overseas staff are employed is the consulting/contracting sub-sector: staff from overseas comprise 22% of the total numbers employed in consulting/contracting. 35% of overseas staff are full-time employees, 55% are part-time and the remainder (10%) work on a contract basis. Chart 5.1 outlines the distribution of overseas staff between the sub-sectors.

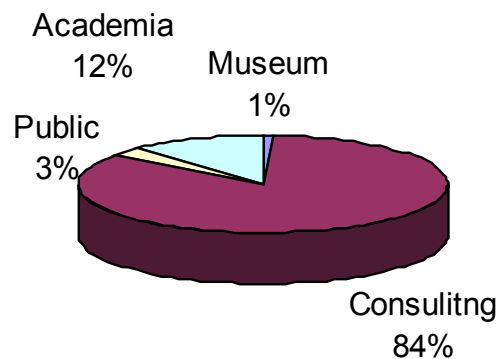


Chart 5.1: Overseas Staff by Sub-Sector

The main difficulty associated with recruiting from abroad relates to obtaining a Duchas excavation licence. Among the areas of competence addressed in the interview for first-time applicants are knowledge of Irish archaeology and relevant legislation, as well as the required range of technical competencies. It is not clear to what extent first-time applicants from overseas are sufficiently trained in these areas. The seminars on licensing now being run by Duchas will help to address this.

Some of the other difficulties associated with employing foreign staff are:

- Language barriers
- Obtaining short term work permits for non –EU staff is very difficult as, in general, the work is of a 6-8 week duration
- Some overseas staff need a longer induction period i.e. in EIA methodologies etc.
- The need for closer supervision.

However, these difficulties are not seen as barriers to employment.

Foreign Consulting Companies

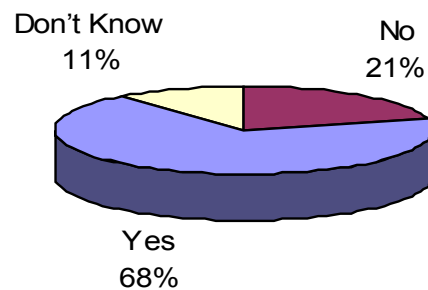
The National Roads Authority is encouraging international archaeological consulting companies to compete for work on future road schemes.

6. MEDIUM TERM DEMAND MODELS FOR ARCHAEOLOGISTS

6.1 DEMAND FOR ARCHAEOLOGISTS

The majority of companies/respondents anticipate there will be increase in demand for archaeologists over the coming five years. The majority indicate that demand will be dependent on the implementation of the NDP and, in particular, the number of NRA schemes going ahead.

Chart 6.1: % of Firms anticipating an increase/decrease in demand

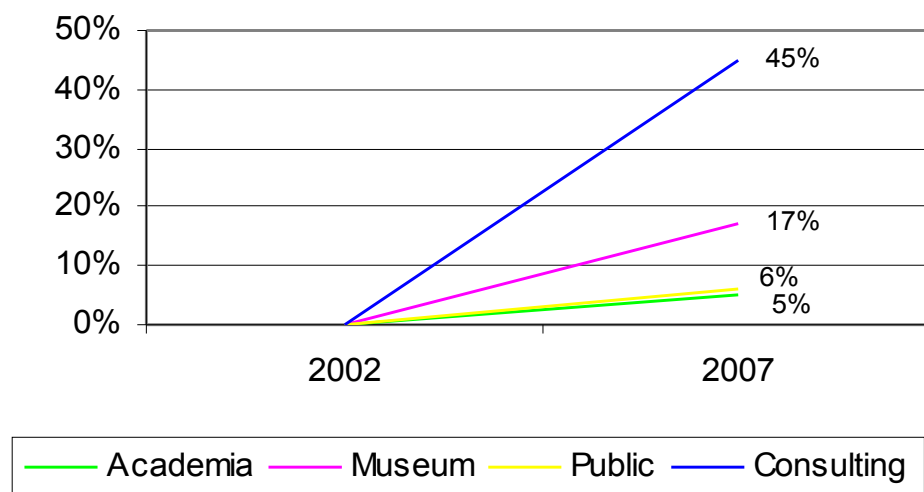


Although two-thirds of companies anticipate an increase in demand for archaeological staff, it is very difficult for them to quantify the numbers required. The anticipated increase in job numbers for the profession as a whole varied widely, with an average increase in the region of 50%.

However when asked about anticipated increases in job numbers for their individual companies respondents predicted a more modest demand – the average anticipated increase in demand was in the region of 35%.

The anticipated demand for archaeologists based on individual company needs is outlined in Chart 6.2.

Chart 6.2: Demand for Archaeologists in the Different Sub-Sectors



The survey indicates there will be marginal growth in the numbers employed in the academic and public sub-sectors. The most significant growth in job numbers will be in the consulting/contracting sub-sector.

6.2 PROJECTIONS

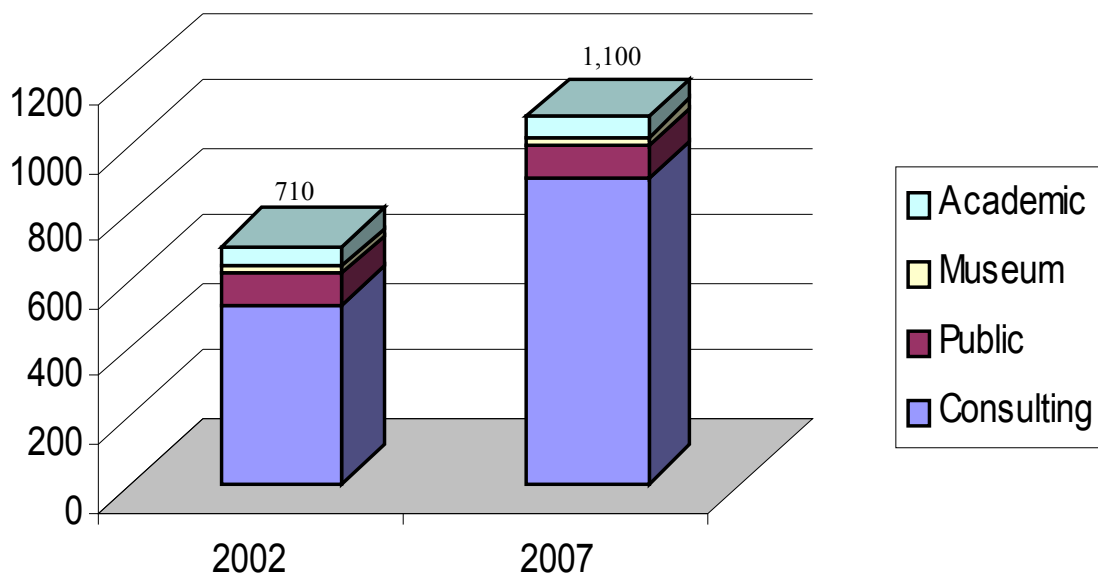
Projections of the demand for archaeologists over the coming five years are made under the following scenarios: high growth, low to medium growth and zero growth. The rate of progress of the National Development Plan will be the main determinant of demand for archaeologists in the medium term.

6.2.1 High Growth Scenario

A high growth situation will occur if the National Development Plan goes ahead as outlined, coupled with a high economic growth rates and other sub-sectors of archaeology are developed e.g. marine archaeology and subsidiary services. This will result in a high demand for qualified archaeologists over the coming five years. Under the high growth scenario up to 1,100 qualified archaeologists will be required.

The highest demand for archaeologists will be in relation to road infrastructure and the NRA schemes. There are 324km of motorway /dual carriageways in Ireland, at present. The NDP will increase this to an estimated 1,200 km by 2006, which equates to more than 140 kms of new road each year over the period of the plan. The NRA anticipate they will need between 600-1,000 archaeologist for the duration of the National Development Plan, the exact number required depending on the archaeological significance of the sites.

Chart 6.3: High Growth Scenario



Note: Figures for 2002 include vacancies

6.2.2 Low to Medium Growth

This is the most likely scenario, where the NDP is revised, with a longer time-scale for implementation of major projects and a modest (3% to 5% p.a.) national economic growth rate. In a low to medium growth scenario an estimated 880 qualified archaeologists will be required.

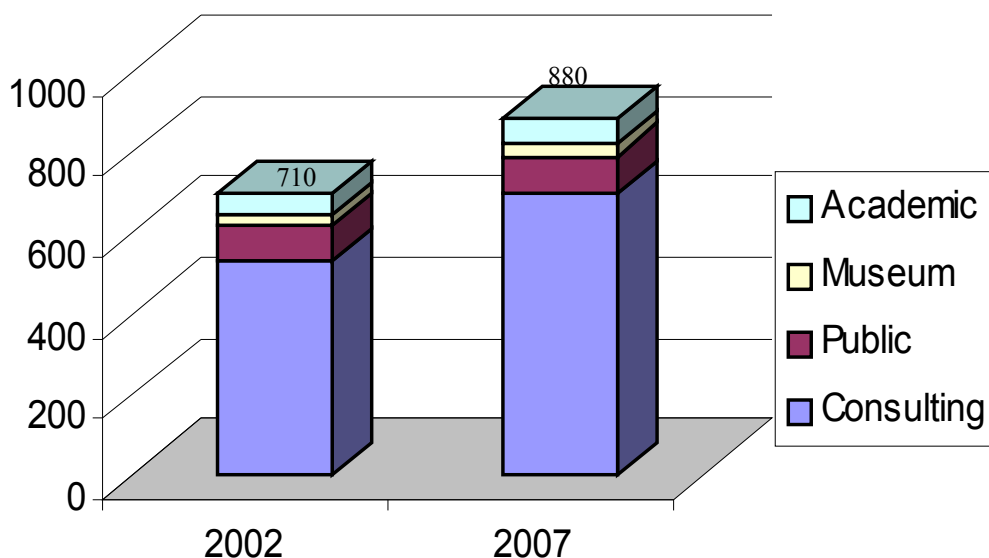
In addition to the slowdown in private sector construction, a number of factors are impeding the construction industry, especially in relation to road construction and housing developments. In the main, these are:

- construction inflation
- higher design standards
- increased compensation to property owners.

In their estimates for 2002, the CIF anticipates an overall 2.5% decrease in volume. However they anticipate the drop will be in private sector construction, which will see a 10% fall, whereas volumes for public sector construction will continue to increase, by as much as 10%.

It now appears that the Government’s finances may not be adequate to deliver the NDP in full within the original timescale. There is already some evidence that the NRA, due to lack of funds, is not in a position to commence construction of all planned new road projects during 2002. There are at least four schemes (54 kms of new road), for which construction was scheduled, but have not been started. Depending on economic conditions, the NRA schemes may be scaled back and this will have corresponding impact on the numbers of archaeologists required to work on these schemes.

Chart 6.4: Low to Medium Growth Scenario

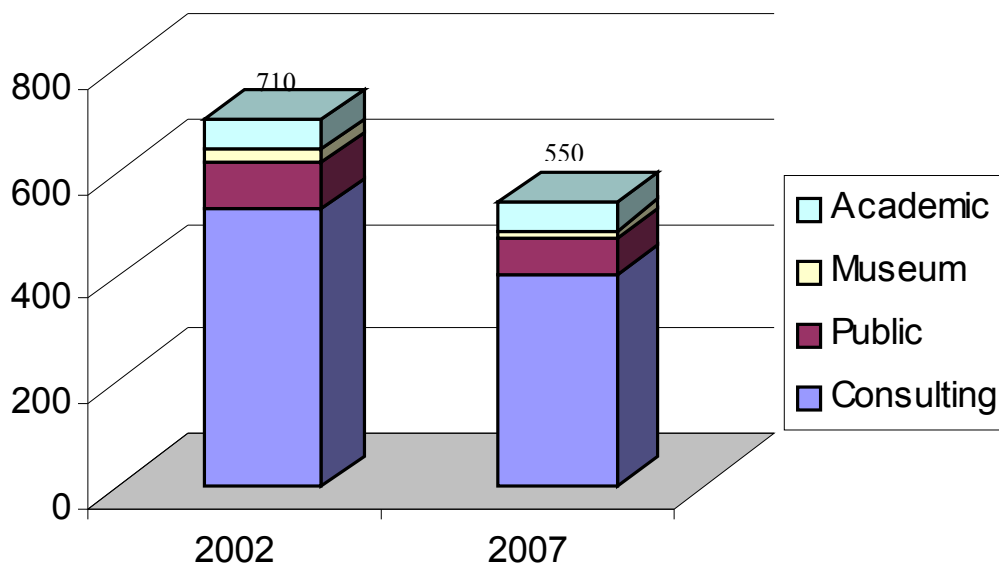


Note: Figures for 2002 include vacancies

6.2.3 Zero Growth

In the event that economic performance weakens sharply the most likely scenario is for significant cut backs in the NDP. Some of the schemes scheduled by the NRA for completion before 2006 would be postponed pending economic recovery. In this scenario both public and private sector construction would be cut-back significantly. Furthermore, existing vacancies would not be filled.

Chart 6.5: Zero Growth Scenario



Note: Figures for 2002 include vacancies

6.3 GAP ANALYSIS

The central projection for medium-term demand in the period up to 2007 envisages a total market requirement for 880 archaeologists. This represents an increase of 170 over the present level of demand, or 230 additional archaeologists inclusive of current vacancies.

The current supply of 650 archaeologists comprises 116 from overseas and 534 from the island of Ireland. The latter figure is higher than anticipated but reflects the responses of employers to the survey conducted for this study. The profiling study of the profession, which is the subject of a separate report, found that this is a comparatively youthful profession, with just 15% of survey respondents aged over 50 years and the average age of respondents being approximately 37 years. (This is identical to the average age of archaeologists in the UK as found by the profiling survey undertaken by the Institute of Field Archaeologists in 1998). In view of this age profile, the numbers retiring from the profession on age grounds in any one year can be assumed to be very small. It is also likely that enforced retirements due to ill-health, injury and death, are also very low.

The annual number of new entries to the ranks of the profession is estimated to be in the region of 70-80 graduates, based on our discussions with the universities. This number includes the output of both undergraduate and postgraduate courses and is confined to the proportion of the total output that can be considered to have an interest in pursuing a career in archaeology (i.e. about 20% of the total). It is clear that, if this number of new entries stayed with the profession, the shortfall in supply would be overcome within about 3 years. The difficulty therefore appears to lie in the ability of the profession to retain qualified staff. Anecdotal evidence from some consultees and survey respondents suggests that there is a relatively high attrition rate among archaeologists, especially in the commercial consulting sector, due to disenchantment with employment terms, career prospects etc.

While the central demand projection - and, indeed, the high demand projection as well - indicates a further growth in demand for archaeologists and a widening gap between demand and domestic supply, it is not recommended that the universities seek to increase their output of archaeologists. They already produce enough. Moreover, there is a temporary balloon in demand resulting from the rapid implementation of the roads programme under the NRA. It is envisaged that the major new inter-urban routes will be completed or well-advanced by 2007, following which the level of demand for archaeological consultants will fall. Even if the road programme is drawn out over a longer period, the demand for associated archaeological work will still fall before the end of this decade. It would therefore be imprudent of the universities to launch a recruitment drive for larger numbers of archaeological students specifically in an attempt to address the current shortfall since the graduates may well miss the demand peak. (This is not to say that more people should not study archaeology if they wish to do so for reasons of education and personal interest).

The shortfall in demand can be addressed in the following ways:

- by attracting larger numbers of archaeologists from overseas to meet temporary peaks in demand (a process that is already underway, led by the NRA initiatives with support from Dúchas)
- by enhancing the terms and conditions of employment in the sector, especially in consulting companies, to improve staff retention rates, and by addressing structural deficiencies to establish attractive career paths for new entrants.

Annex A: National Development Plan 2000-2006 - Roads Investment

The main aspects relating to the road development strategy include:

➤ National Primary Roads.

The completion of the following routes to motorway/improved dual carriageway standard by 2006:

- Dublin to Border (M1)
- Galway to Dublin (N4/N6)
- Cork to Dublin (N8)
- Limerick to Dublin (N7)
- Waterford to Dublin (N9)

There will be further major improvements on:

- routes to the North-West (N2, N3, N4, N13-N15, N16)
- the western corridor (N17, N18, N24, N25, N5, N26)
- routes in the South and East (N11, N22, N28, N30)
- completion of the M50 and Dublin Port Access Tunnel

➤ National Secondary Roads

The strategy for national secondary roads will concentrate on routes which are of particular importance to economic and regional development.

National Secondary roads to be improved include:

- S&E region- N52, N69, N86, N70, N71, N80, N81, N85
- BMW region – N59, N61, N80, N52

➤ New Routes

The need for the development of new routes will be evaluated over the period of the NDP. Where the need for a new route is established, funding will be provided for the advanced planning and design of the route in the Plan period, with a view to bringing the project to construction in an appropriate time frame.